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ABSTRACT

One of a series of nine reports of Project ACTIVE (Attaining Competence for Teaching in Vocational Education), this report focuses on trade and industrial (T&I) education, one of nine project components. An overview of competency-based vocational teacher education (CBTE) and the Florida exemplary CBTE project is provided. Part 1 describes the competency identification phase of the trade and industrial education component including review of related research, methodology for identifying competencies, findings (competencies listed to indicate appropriateness for awareness, practice, or real school situation components of preservice and inservice portions of the program), and conclusions. Part 2 describes procedures for identifying and validating of specific criteria for assessing mastery of the competencies and lists the criteria in a 15-page table under competency statements divided into these categories: (1) Orientation to vocational teaching, (2) preparation for instruction, (3) presentation of instruction, (4) application of learning, (5) evaluation, (6) classroom/laboratory management, (7) human relations, and (8) professional role, including the method of assigning credit to competencies. Part 4 describes two sub-components to the T&I project (communication competencies and reading project). Appendixes contain instruments used in the study. A bibliography is included. (TA)

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EXEMPLARY COMPETENCY-BASED VOCATIONAL TEACHER EDUCATION PROJECT:

TRADE AND INDUSTRIAL EDUCATION COMPONENT

THE DEVELOPMENT OF A UNIVERSITY LEVEL COMPETENCY-BASED VOCATIONAL TEACHER EDUCATION PROGRAM FOR INDUSTRIAL EDUCATION TEACHERS AT FLORIDA STATE UNIVERSITY

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Final Report of
University Level Competency-Based Teacher Education Program
Trade and Industrial Education Component

Project No. VTAD-5 #6-0128

From September, 1975 to June, 1976

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Program of Vocational Education
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The project reported herein was conducted pursuant to a grant from the Division of Vocational-Technical Education, Florida Department of Education. Contractors undertaking such projects are encouraged to express freely their professional judgments in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent the official position or policy of the Florida Department of Education.

FOREWORD

The competency-based teacher education (CBTE) movement is being explored as a viable alternative to the traditional time-based, course oriented approach to teacher education. The field of vocational-technical teacher education has been involved in CBTE for some time. Several states and teacher education institutions are developing and implementing competency-based programs aimed at preparing and certifying professionally competent vocational educators at various levels. Florida's commitment to competency-based vocational teacher education is well-known.

In an effort to promote CBTE for vocational education, the Florida Department of Education, Division of Vocational Education, funded the initial phase of an exemplary competency-based vocational teacher education project at Florida State University. This project, called Project ACTIVE, is aimed at developing a viable competency-based approach to preparing vocational teachers, administrators, supervisors, and related professionals.

Several individuals have contributed significantly to the progress of this project. Mr. Joe Mills, Director of Vocational Education, Division of Vocational Education, Florida State Department of Education, and Dr. Kenneth Eaddy, Chief, Bureau of Vocational Research, Dissemination and Evaluation, have demonstrated their personal and professional commitments to the competency-based approach. Their support and leadership have made this project possible.

The Trade and Industrial Education component of the project had several contributors. The project staff wishes to acknowledge the valuable contribution made by state-wide advisory committee members who provided guidance and direction for the conduct of this activity. Their input has added immensely to the success of the project. The reader should refer to page 29 for a complete listing of advisory committee members. The project staff is also grateful to Mr. Talmadge Rushing, Administrator for Industrial Education, Division of Vocational Education, for his encouragement and support.

Robert E. Andreyka
Project Director and
Program Leader
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This report is one of a series that focuses on the competency and criteria identification phase of the Exemplary Competency-Based Vocational Teacher Education Project at Florida State University. Each report covers one of the teaching, leadership, or special needs components within the project. This series of reports is listed below:

Report No.

TEACHING COMPONENTS

1. COOPERATIVE VOCATIONAL EDUCATION
2. INDUSTRIAL ARTS (competency ident. only)
3. TRADE AND INDUSTRIAL (also delivery system)
4. VOCATIONAL BUSINESS EDUCATION

LEADERSHIP COMPONENTS

5. ADMINISTRATION/SUPERVISION
6. CAREER EDUCATION
7. RESEARCH AND EVALUATION

SPECIAL NEEDS COMPONENTS

8. DISADVANTAGED
9. HANDICAPPED

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OVERVIEW

OVERVIEW

COMPETENCY-BASED VOCATIONAL TEACHER EDUCATION

Very few movements in education have received more widespread attention than the competency-based teacher education (CBTE) movement. Houston and Howsam (1972) reported that rarely, if ever, has any movement swept through teacher education so rapidly or captured the attention of so many in so short a time as has the competency-based movement. Already well under way, the approach offers promise of renovating and regenerating teacher education. Equally significant, the authors added, it appears probable that it will do so in record time.

For those who doubt whether competency-based teacher education is with us to stay, the following sampling of national involvement in CBTE may be somewhat surprising (Andreyka and Blank, 1976):

- over 30 states report either legislative/administrative support for CBTE or are studying the concept seriously;
- nearly a hundred teacher education institutions report either "total" CBTE programs or alternative programs;
- there are at least 20 national consortia, institutes, centers or other groups whose primary or major function is the promotion of the CBTE movement; and
- literally hundreds of articles, position papers, monographs and other publications dealing specifically with CBTE appear monthly.

It seems, then, that much of the time we now spend philosophizing and debating the relative merits and demerits of CBTE and whether it will survive should, perhaps, be directed toward implementing the concept and making it work.

Origin of the CBTE Movement

Like any major educational trend, it is impossible to establish the exact date marking the beginning of the competency-based teacher education movement. The concept seems to have evolved slowly and steadily during the past two decades. Schmieder (1973) has identified some of the motivational forces that appear to have given impetus to the CBTE movement:

1. Introspection of the Educational Community
2. Emphasis on accountability

3. Increased focus of political action on fiscal issues

4. Management organization movement

5. Press for personalization and individualization of education

6. Desire of state education departments to develop more effective certification processes and standards.

Elam (1971) in one of the earliest in-depth looks at the competency-based teacher education movement, placed the origins of CBTE somewhat earlier. He pointed out that CBTE predates the current rage for accountability and most probably has its roots in the general conditions present in society and the institutional responses to them characteristic of the Sixties.

The vocational teacher education field has been involved in the CBTE movement for some time. Early studies by Walsh (1960), Courtney (1968), Crawford (1967), Ratner (1967) and others were aimed at identifying competencies important to vocational and technical teachers and related personnel. The comprehensive competency-based vocational teacher education research and development project at the Center for Vocational Education (Cotrell, et al, 1971) was begun in 1967, before the development of much of the current popularity of CBTE.

Need For Competency-Based Vocational Teacher Education

For many years, vocational and technical teachers, administrators, supervisors and related personnel have received their professional preparation in traditional university-based programs. These programs usually consist of a series of courses focusing upon the acquisition of knowledge and which culminate in a paper and pencil evaluation. This course-oriented approach for preparing teachers and individuals in leadership roles is coming under criticism for not meeting the real needs of practitioners (Finch and Hamilton, 1975; Norton et al, 1975).

Among the shortcomings associated with the traditional approach are:

1. Objectives are vague or general

2. Program is content and textbook-oriented

3. Assessment is only cognitive in scope

4. Content and objectives are based upon tradition

5. Program focuses on general principles but seldom relates these to the problems faced by educators

6. Instruction is not tailored to the needs of individuals

7. The end product is not systematically evaluated

8. Minimum standards of acceptable performance are not established.

Finch and Hamilton (1975) reported that many of the professional courses completed by vocational and technical teachers are offered in random sequence and often focus on principles and techniques related only generally to the teacher's actual role in the classroom and laboratory. Schaefer (1971) reported that present vocational teacher education programs amount to nothing more than small encounters with a large and complex personnel development problem.

Competency-Based Vocational Teacher Education Programs

An increasing number of vocational-technical teacher education programs are exploring the competency-based approach for preparing teachers, administrators, supervisors, and related professionals. Some programs have primarily focused on the professional needs of teachers in particular service areas while others have addressed the professional needs of vocational-technical educators in several service areas and levels. While space does not permit a detailed review of competency-based vocational-technical teacher education programs currently in operation, the following does give a brief overview of some CBTE research and development activities which have focused on identifying competencies needed by vocational educators at various levels and in several service areas.

A study by Courtney (1968) identified the need for a common core approach to competency identification. Courtney reported that much of the controversy surrounding teacher education deals with determining what should be included in programs. A second study (Courtney and Halfin, 1969) involved the identification of professional competencies needed by instructors in vocational agriculture, home economics, trade and industrial education, distributive education, and business education. Forty randomly selected teachers from four different states participated in the study. An important aspect of this research was the use of factor analysis for grouping competencies into categories.

Spaziani and Courtney (1971) conducted a research project in which secondary and community college teachers were asked

to rate 99 professional competencies. The rating scale used was an adaptation of Bloom's taxonomy of educational objectives (Bloom, 1956). Competencies were rated according to level of proficiency needed by teachers: knowledge, comprehension, application, analysis, synthesis, or evaluation.

Terry, Thompson, and Evans (1972) completed a study in Illinois in which 107 vocational educators from all service areas were assembled and asked to identify and categorize professional competencies needed by vocational and technical teachers. Four-hundred-seventy-seven competencies were identified in this manner.

A comprehensive common core CBTE research and development project was conducted by the Center for Vocational Education at The Ohio State University (Cotrell et al., 1971). First, professional competencies (performance elements) common to teachers in all vocational service areas were identified as well as additional competencies important to teacher-coordinators in cooperative vocational education programs. Performance-oriented objectives were then developed for each performance element identified. A total of 384 performance elements were identified by the Center's research.

Next, self-instructional curricular materials based upon the competencies previously identified were developed. Modules were developed that were designed to help teacher trainees attain specific professional competencies. More than 100 separate modules in 10 categories were developed that incorporated the 384 performance elements (Center for Vocational Education, 1974).

These competency-based teacher education modules underwent advanced testing at Colorado State University, Rutgers University, and Florida State University during 1975 (Center for Vocational Education, 1975). Ten additional test sites were added during the Fall of 1975, one in each of the 10 United States Office of Education regions (Hamilton, 1975).

Volger and Patton (1974) reported on a department-wide CBTE program in the University of Michigan occupational educational program. This program was designed to prepare trade and industrial, health occupations, vocational business, and distributive education teachers with generic professional competencies. This program began in 1971 and is now fully implemented. Competencies originally identified by the Center for Vocational Education constituted the basis of the program.

Competency-Based Vocational Teacher Education In Florida

There has been a considerable amount of research and development activity in competency-based vocational-technical teacher education in Florida. In its 1974 report, the Florida State Advisory Council for Vocational-Technical Education recommended that efforts to identify unique competencies needed by teachers in specific vocational program areas be continued and upgraded (Florida Department of Education, 1974). It was reported that during fiscal year 1974 work was begun in State Department funded projects to identify unique professional competencies in home economics, industrial, and diversified education.

In a publication entitled The Florida Program For Improving the Training, Evaluation, and Licensure of Educational Personnel (Florida Department of Education, 1971) it was reported that the executive committee of the Teacher Education Advisory Council requested that a plan be devised to improve teacher education and certification in this state. Current research and development activities reported included:

1. Develop comprehensive statements of teacher competencies and develop instruments for assessing them

2. Conduct research to demonstrate the relationship between teaching competency and student learning

3. Identify and produce material for training teachers and other educational personnel in specified competencies

4. Assist institutions and school districts with staff development for teacher training personnel.

A study was conducted in 1972 (Lima) to identify competencies important to Florida's business education teachers. In 1974, a study was conducted in Florida aimed at identifying common and unique competencies for teacher coordinators in work experience and diversified cooperative training programs. A study completed in 1975 (Perkins) identified 164 professional competencies important to Florida's trade and industrial education teachers.

Phase I of a competency-based teacher education project aimed at trade and industrial education teachers has been completed in the state of Florida (Andreyka, 1975). This program has identified 32 entry level competencies needed by that state's T & I teachers. Also identified were assessment criteria that may be used to assess mastery of the competencies. The project also involved the review of samples of competency-based teacher education instructional materials available from

throughout the country. A wide variety of individuals was involved in competency and criteria identification and validation. Participating were trade and industrial education teachers, administrators and supervisors, teacher educators, state department representatives, Board of Regents representative, and the Florida Industrial Education Association.

Phase II of this project addressed four major issues involved in implementing CBTE. These issues were implementation of CBTE in the university setting, development of a viable preservice and inservice program and the identification of alternative funding sources for competency-based teacher education.

A study completed in 1976 (Blank) identified over 100 professional competencies important to community college technical instructors in engineering, health, distributive, business, and public service technologies in Florida.

EXEMPLARY COMPETENCY-BASED VOCATIONAL TEACHER EDUCATION PROJECT AT FLORIDA STATE UNIVERSITY

Florida State University as well as other universities in Florida and throughout the nation currently prepare teachers and related professionals using the traditional course-oriented approach. These traditional teacher education programs usually vary in content relevance and overall program quality. The FSU Competency-Based Vocational Teacher Education Project was initiated because of feelings by many vocational educators that traditional university courses might not be meeting the real needs of vocational teachers and related professionals.

The Exemplary Competency-Based Vocational Teacher Education Project at Florida State University is aimed at developing and implementing a totally competency-based professional vocational education program. Called Project ACTIVE (Attaining Competence for Teaching In Vocational Education), the project's intention is to overcome many of the shortcomings of the traditional course-oriented approach to preparing professionally competent vocational and technical teachers and related personnel. This is an exemplary project and could serve as a research base for developing a CBTE model for other Florida universities and also other states.

This report is one of a series and it focuses on one component of the project. Other reports have been prepared describing the other teaching, leadership and special needs components within the project. This series of reports covers the initial phase of the project: *Competency and Criteria Identification.* Listed below is the report number for each component.

Goals and Objectives

The long-range goal of the project is to develop an exemplary competency-based vocational teacher education and leadership development program. The project is aimed at meeting the professional needs of the following groups, both at the preservice and inservice levels:

Report No.

TEACHING COMPONENTS

1. Cooperative Vocational Education
2. Industrial Arts
3. Trade and Industrial
4. Vocational Business Education

LEADERSHIP COMPONENTS

5. Administrators/Supervisors
6. Career Education Specialists
7. Researchers

SPECIAL NEEDS COMPONENTS

8. Disadvantaged
9. Handicapped

The research effort was designed to accomplish the following objectives:

**1. Identification and validation of professional competencies (skills) important to vocational teachers and professional support personnel.

**2. Identification and validation of specific assessment criteria for assessing mastery of competencies.

3. Development and/or adoption of performance-based, self-paced learning packages designed to help participants master important competencies.

4. Development of evaluation instruments and strategies providing for objective assessment of competency mastery while the participant is performing in an actual school situation.

5. Implementation of a competency-based program in a traditional university setting.

6. Development of instruments and strategies for overall program evaluation.

**The first two objectives have been accomplished and they are the focus of this series of reports.

Conceptual Model

The first step in the exemplary project was to develop the conceptual framework of the CBTE program. After reviewing various conceptual models of CBTE programs (Elam, 1971; Houston and Howsam, 1972; Norton et al, 1975) the project staff developed a model which would be suitable for vocational-technical teacher education (Andreyka and Blank, 1976). Figure 1 shows a schematic of this model while Figure 2 explains each element of the model in more detail.

Figure 1

CBTE CONCEPTUAL MODEL

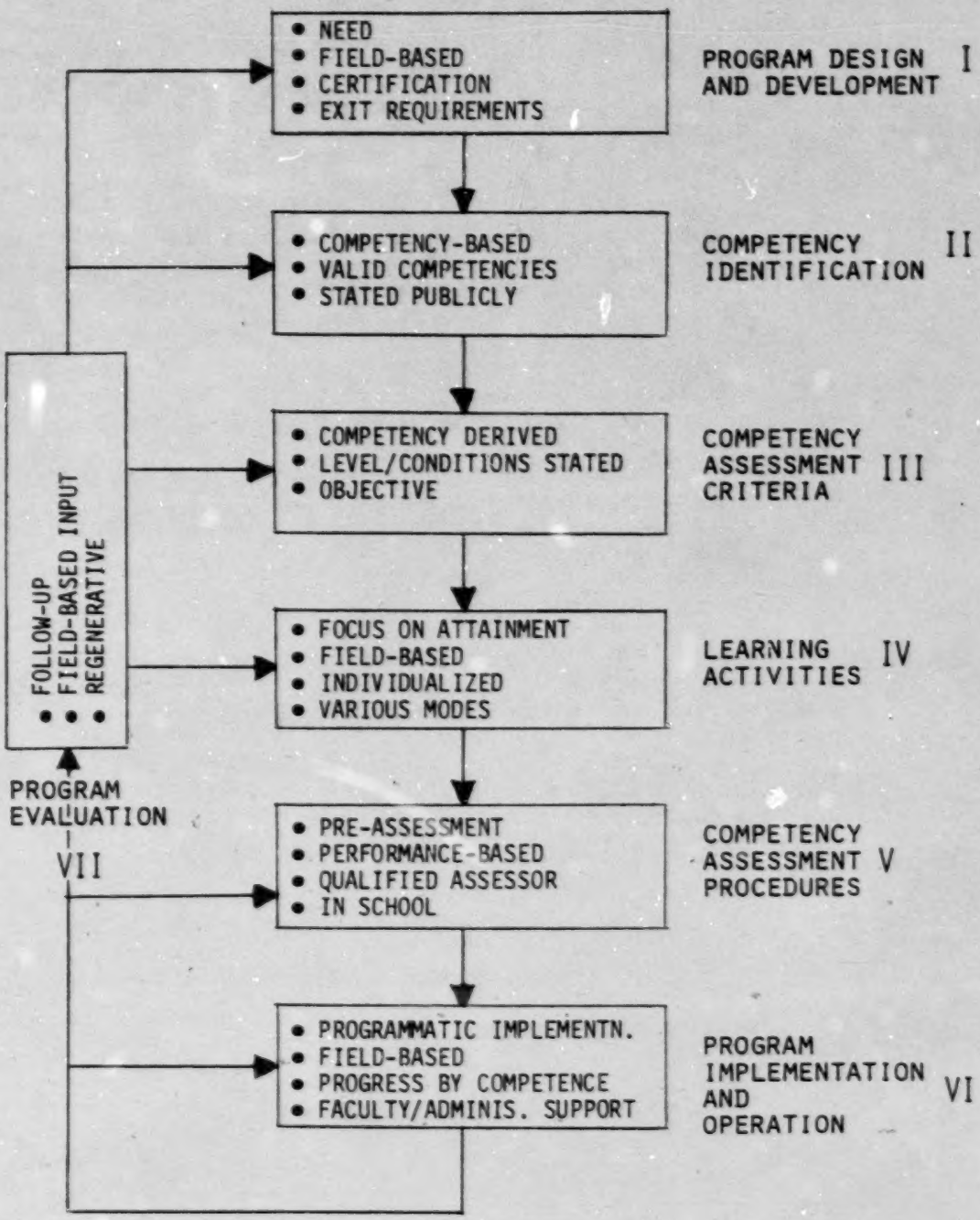

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Figure 2

Elements of CBTE Conceptual Model

I. Program Design and Development

A. *Need Identification.* A thorough statement should be provided on the need for the program, including its advantages over the present program and benefits to prospective teachers and their potential students.

B. *Field Based Design Effort.* Evidence should be available that input was received from teachers, state department personnel, parents, students, principals, advisory committees and professional organizations during program design.

C. *Certification.* Program should produce certifiable individuals; certification personnel should be consulted to allow for certification by mastery of competencies rather than by course completion.

D. *Emphasis on Exit Requirements.* The program should place primary emphasis on recording mastery of competencies and eliminating non-relevant entrance requirements.

II. Competency Identification

A. *Basis for Program.* The program should be based solely on appropriate prespecified competencies that have been identified as being important to teachers.

B. *Valid Competencies.* Competencies should be validated by consensus of opinion of qualified experts, or sound research base such as task analysis, teacher poll, literature search or other.

C. *Statement of Competencies.* Teacher trainees should be able to demonstrate, whenever possible, the mastery of competencies as they are stated, and competencies should be made public in advance.

III. Competency Assessment Criteria

A. *Derived from Competencies.* Criteria for assessing competency mastery should be based solely on the competencies themselves.

B. *Expected Level of Performance and Conditions.* The

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expected level of performance for successful mastery and under what conditions should be stated and made public in advance.

C. *Objective Assessment Criteria.* Assessment criteria should be specific and objective and based on observable performance by teacher trainee.

IV. Learning Activities

A. *Focused on Competency Attainment.* Learning activities should be focused solely on helping teacher trainees master pre-specified competencies.

B. *Field Based.* Learning activities should be based on actual teaching conditions wherever practical.

C. *Different Modes Available.* Various modes of instruction should be utilized including mediated instruction.

D. *Individualized Instruction.* Self-instructional and self-paced instruction should be available where practical.

V. Competency Assessment Procedures

A. *Pre-Assessment.* Opportunities should be available for pre-assessment for diagnostic purposes and to permit credit for competencies already mastered.

B. *Based on Performance.* Competency mastery should be based primarily on teacher-trainees performance and/or desired change in behavior of students.

C. *Setting.* Assessment should be carried out in an actual school setting whenever practical.

D. *Qualified Assessor.* Assessment should be carried out by one or more qualified resource persons who have teaching experience.

VI. Program Implementation and Operation

A. *Programmatic Implementation.* Total program should be competency based rather than course by course substitution.

B. *Faculty/Administrative Support.* Program should have necessary faculty and administrative support to function on a competency based format.

C. *Field Based.* Program implementation should involve teachers, state department, parents, principals, professional organizations, students and others.

D. *Progress by Competence.* Teacher trainees should proceed through program based on competency mastery rather than by course or time frame.

VII. Program Evaluation

A. *Follow-up.* Follow-up procedures should be established to determine if graduates are as effective as graduates from other programs.

B. *Field Based.* Program evaluation should receive input from various sources in the schools.

C. *Used for Program Improvement.* Program evaluation data should be used directly to improve the program.

Competency and Criteria Identification Phase

This series of reports covers the initial phase of the project which identified professional competencies important to practitioners in each component of the project. Also identified were specific assessment criteria that may be used to assess mastery of the competencies. Subsequent phases of the project will be based upon these professional competencies identified and validated as important to vocational teachers, administrators and related support personnel throughout Florida. Professional competencies important to practitioners within each area of the project were identified, along with assessment criteria, by surveying vocational educators in the field.

Preliminary lists of competencies were identified in each component within the three major areas of the project--teaching, leadership and special needs. Each preliminary competency list was submitted to a jury consisting of persons with expertise in the appropriate area, for preliminary validation. Jury members had broad latitude to revise, add, or delete competency statements.

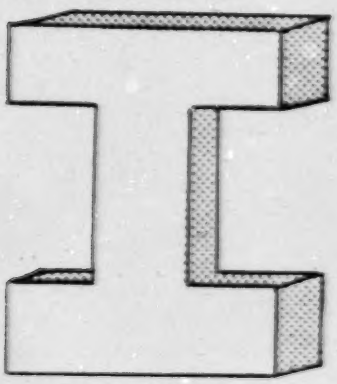
Based on comments of jury members, the competency statements were revised, compiled on a survey instrument, and submitted to a sample of practitioners in the field for each component of the project with the assumption that teachers and other professionals were qualified to identify competencies most important to them.

These survey instruments were mailed to vocational and technical teachers, administrators, supervisors, researchers, career education specialists and cooperative vocational education teacher-coordinators. These individuals rated each competency as to its importance to them in their positions. Data from returned instruments were analyzed to identify significant differences among sub-groups within each component.

For each competency validated as important, specific, objective assessment criteria were written that may be used by an evaluator to assess whether individuals have mastered the competency. Preliminary criteria statements were written for each competency, submitted to a jury comprised of individuals with expertise and experience in that particular area, and revised based upon a synthesis of jurors' comments.

Later phases of the project will include the adoption and development of learning materials, development of assessment strategies and instruments, implementation in the university setting, and development of program evaluation techniques. This report describes the competency and assessment criteria identification phase for one component within the project. Additional reports have been prepared describing the competency and criteria identification phase of the other teaching, leadership and special needs components.

PART I



TRADE AND INDUSTRIAL EDUCATION COMPONENT- Competency Identification

CHAPTER 1

INTRODUCTION - COMPETENCY IDENTIFICATION PHASE

The State of Florida has embarked on a statewide coordinated effort to develop and implement a competency-based teacher education (CBTE) program for Trade and Industrial Education teachers. This report addresses the development of a university level competency-based Industrial Teacher Education program. The primary goal of this project was to identify and validate professional competencies essential to trade and industrial teachers in Florida and to develop strategies for implementing preservice (prior to teaching) and inservice (currently teaching) CBTE programs to serve the state's vocational-industrial education teachers. A second goal of the developmental activity was to implement the competency-based program in Florida State's traditional university setting.

Background

The purpose of trade and industrial education is to prepare students adequately for successful entrance into and advancement within industry. The prime requisite for a successful program is a qualified teacher who is occupationally competent and also competent in teaching methods and supporting skills which are integral to the success of the instructional process. To become occupationally qualified the teacher must, of course, spend years in industry. As a result, little time is available for professional teacher education development in a formal teacher education program in a college, university, or extension center. Therefore, a carefully planned program of preservice and inservice education which will enable the teacher to acquire necessary skills in teaching in the shortest possible time is essential.

Need

In Florida, vocational industrial teachers are generally recruited from industry without prior teacher education, and are required to enroll in college credit courses to meet teacher certification requirements while teaching. In most cases, the teacher will take whatever college courses are offered in the geographical area, regardless of his/her immediate needs. For example, a beginning teacher may have a need for help with lesson planning, but only a course in administration of vocational education is available. This situation results in much frustration and is a contributing factor to a high turnover rate among new teachers. It also

causes a negative attitude toward teacher education by many of those who remain. Therefore, there is a need for a program which will allow teachers more flexibility in terms of acquiring essential teaching skills.

The CBTE approach has been advocated as one answer to this dilemma. The competency-based approach explicates the instructional process into its component parts by: (a) identifying specific instructional competencies, (b) defining the criteria used to judge success, and (c) making the teacher trainee accountable for meeting the criteria of success in a real teaching situation. This process should give some freedom from classroom instruction. A curriculum for vocational-industrial education teachers which includes CBTE options would allow for a wider selection of alternatives and more rapid progress.

CHAPTER 2

REVIEW OF RELATED RESEARCH

Several studies were identified that were aimed at identifying the professional competencies needed by trade and industrial education teachers. Nichols (1964) conducted a study in Ohio that defined the tasks which comprise the job assignments of trade and industrial (T&I) education teachers. Out of this study came 25 guides that were used in the professional preparation of T&I teachers in that state. Walsh (1960) completed a study that identified 107 professional teaching competencies for trade and industrial education teachers by using the occupational analysis approach.

A study in the area of trade and industrial education was conducted in the state of Georgia (Fowler, et al, 1974). This study identified competencies needed by T&I teachers at all levels and also determined whether each competency should be developed prior to employment or after employment. This study involved a consortium between the University of Georgia and Savannah State College to determine and provide performance-based vocational competencies within a T&I Education program for a baccalaureate degree. The broad purpose of this project was to identify competencies needed by a preservice baccalaureate program for Trade and Industrial Education teachers. Identification of the competencies was to provide the basis for developing performance objectives and sequencing those objectives into a logical program of study for performance-based teacher preparation at the cooperating institutions.

Terry, Thompson, and Evans (1972) completed a study in Illinois in which 107 vocational educators from all service areas were assembled and asked to identify and categorize professional competencies needed by vocational and technical teachers, including T&I. Four hundred seventy-seven (477) competencies were identified in this manner. The competencies were grouped into eight broad categories. Participants were also asked to rate each competency as to need and to identify where the competency should best be attained. Choices were: (1) preservice course in specific occupational area, (2) preservice internship, (3) formal inservice courses, or (4) informally on the job.

The review of related research also addressed competency-based vocational teacher education program development. A variety of sources relating to competency-based programs at

the national and state levels were reviewed for possible incorporation into a university-level CBTE program at Florida State University.

A study by Courtney (1968) identified the need for a common core approach to competency identification. Courtney reported that much of the controversy surrounding teacher education deals with determining what should be included in programs.

The Center for Vocational Education, Ohio State University (Cotrell, 1971), has developed performance-based vocational teacher education curricula materials designed for use in implementing preservice and inservice competency-based teacher education curriculum especially designed for use in teacher education programs in vocational education. These curricula materials consist of 100 professional vocational teacher education modules, a student guide, and a resource person guide. The development of this curriculum involved three major phases: (1) the research base, (2) development of curricular materials, and (3) testing and revision of materials. These developmental phases will be followed by a dissemination phase to complete the model curriculum.

Vogler (1975) reported on a department-wide CBTE program in the University of Michigan occupational education program. This program is designed to prepare trade and industrial, health occupations, vocational business, and distributive education teachers with generic professional competencies. The program began in 1971 and is now fully implemented. Competencies originally identified by the Center for Vocational Education form the basis of the program.

In September, 1973, the Division of Vocational Education, Temple University began an experimental performance or competency-based teacher education program (Adamsky and Cotrell, 1975). Program VITAL, as the program is called, was designed to serve the professional education needs of intern vocational industrial education teachers. Interns are mature men and women who begin teaching in public schools with verified occupational experience and competence, a high school diploma or the equivalent, and the potential to become professional teachers, but little or no formal teacher preparation. Formal preparation of interns must be provided on an inservice basis. Interns are full-time teachers in the 17 county Eastern Region of Pennsylvania served by Temple.

In its first year of operation, project VITAL served 114 interns in 28 different schools. A differentiated staff of 45 professionals provided this service. Since then, the staff has been increased to 61 which serves the needs of approximately 150 interns in 32 schools.

Cook and Richey (1975) report that a competency-based vocational teacher education program, "Vocational and Applied Arts Education (VAE)", was established at Wayne State University, January 1, 1971, by the Dean of the College of Education. This was in response to a petition signed by all the members of the former departments of Business and Distributive, Family Life, and Industrial Education. The primary mission of this new department was to develop a systems approach for the preparation of teachers, supervisors, and administrators in Vocational and Applied Arts Education.

Roberts and Becker (1974) completed a study of trade and industrial education teachers in Florida in an attempt to relate various criteria of teaching effectiveness to a teacher's verbal and non-verbal behavior. It was believed that findings from the study would be especially useful to vocational educators.

Data for the study were derived from observing 124 industrial education teachers located in various programs and schools throughout the state. This study showed that differences in behavior and attitude among teachers categorized according to their supervisor and/or student ratings could be identified. While, no doubt, each teacher had a somewhat unique style of teaching, the "best" teachers were characterized by being very dynamic, by having superior delivery skills, by spending a great amount of time in direct contact with their students, and by creating a pleasant social-emotional environment through the use of praise and banter. Each of these characteristics, as well as positive attitude toward students, appears to have an important influence on supervisor or student ratings. Only dynamism, however, has an important influence on both.

In 1971, the University of West Florida, in cooperation with the Florida Department of Education, the Panhandle Area Educational Cooperative, and seven local school districts, designed project INSTEP to assist vocational and technical teachers in becoming more effective (Florida Department of Education, B-2 Teacher Education Program - Final Report, Tallahassee, 1973). The program made available information and experiences which promoted the acquisition of knowledge, skills, and attitudes concerning teaching and learning. The participants who successfully completed the program were able to:

(1) Plan, identify and write objectives

(2) Organize and manage materials and experiences for teaching and learning

(3) Select and utilize instructional techniques

(4) Devise means to measure and evaluate the effectiveness of programs and the performance of students

(5) Become fully certified (Standard Rank III).

An intensive training phase was conducted during six weeks of the summer, 1971, on the campus of the University of West Florida. The trainees were in session five (5) days per week for seven (7) hours each day. Individual counseling days were established in order that the trainer and trainee might converse on a one-to-one basis for the purpose of giving direction and getting feedback. Each trainer was required to keep a notebook in order that his or her progress toward meeting the specified objectives might be determined. At the completion of the intensive training phase, the notebook became a manual in which the individual participant had his plans and procedures for instruction in his area of specialty.

Dade County, Florida (1971) developed a program for performance-based training and standard certification of industrial education teachers. During the 1971-72 school year, 25 inservice teachers received this training. The program consisted of the following 13 individualized packages (modules), encompassing a variety of learning experiences:

PB 1 - Orientation-Vocational Education

PB 3 - Teaching Methodology, Part I--Effective Teaching Factors

PB 4 - Teaching Methodology, Part II--Organization for Teaching

PB 5 - Teaching Methodology, Part III--Effective Teaching Procedures

PB 6 - Teaching Methodology, Part IV--Construction of Learning Experiences

PB 7 - Instructional Planning

PB 8 - Communication Skills

PB 9 - Human Relations

PB 10 - Instructional Aids

PB 12 - Lab Management and Organization

PB 13 - Foundations of Vocational Education

PB 14 - Principles and Organization of Cooperative Education

SM 1 - School Lab Safety Manual

Participants progressed through the modules in a semi-structured setting. Most of their activities were self-paced and individualized. However, the program also included formal type presentations from resource persons with expertise in specific educational fields.

Another Florida competency-based vocational teacher education program was developed by Pinellas County. This program, like that of Dade County, also utilized individual learning packages (modules), but was more structured. Potential industrial education teachers attended formal sessions prior to becoming employed in their respective school. The curriculum incorporated the following topics:

Module 0 - Orientation

Module 1 - Performance as a Planner

Module 2 - Performance as an Implementor

Module 3 - Performance as an Evaluator

Module 4 - Performance as a Motivator

Module 5 - Performance as a Professional

Instructors Guide

Perkins (1975) completed a study in Florida of 133 T&I teachers aimed at identifying important competencies. Instructors were included from across the state of Florida One hundred sixty-four professional competencies were analyzed as to their importance to T&I teachers.

CHAPTER 3

METHODOLOGY FOR IDENTIFYING COMPETENCIES

This section presents the methodology used to identify and validate competencies needed by Florida's T&I instructors.

Phase I

Phase I of the project (Andreyka, 1975) was primarily concerned with identifying and validating preservice competencies and related assessment criteria. Florida State University was the coordinating institution in this industrial education competency-based project. Involved in the project were state department personnel, teacher educators, industrial teachers, supervisors, and administrators. All of the state's universities which are approved to offer teacher education programs in trade and industrial education were also involved.

Purpose

The specific objectives of Phase I were to: (a) identify tentative competencies which appeared to be important to beginning trade and industrial education teachers through a statewide advisory committee for formative validation; (b) develop assessment criteria for each valid preservice competency; and (c) evaluate CBTE instructional materials developed throughout the United States and determine those suitable for competency-based industrial teacher education in Florida.

Identification of Competencies

Using existing CBTE materials as a base, the project staff identified 114 competency statements to begin the advisory committee's identification of competencies important to industrial education teachers in Florida. Each competency was placed on a card along with specific criteria statements, and a sorting procedure was conducted which required each advisory committee member to place a minimum of 20 competencies in each of four categories: (1) preservice (minimum survival skills), (2) inservice entry level of certification (equivalent to B.S. professional requirements), (3) inservice advanced certification level (equivalent to M.S. professional requirements), and (4) not applicable. Before the initial advisory committee sort, two pre-sorts were conducted using Florida State University students in Jacksonville and Tallahassee to test the procedure. Six

working meetings of the committee were held during the 1974-75 academic year to further refine, add to, or delete from the competency list.

Identification of Assessment Criteria

After an initial competency list had been established, the project staff identified criteria for the assessment of each competency. The competencies and the criteria for their assessment were then presented to the advisory committee for their review, evaluation, and revision. A formal listing of preservice competencies and criteria was then prepared for validation.

Validation Workshop

During the summer, 1975, a statewide workshop was conducted which focused on validating preservice competencies (entry survival level). The competencies and criteria identified earlier by the advisory committee were critically analyzed and validated through the use of four workshop teams. Each team consisted of at least one teacher educator, one vocational administrator or supervisor, and two industrial education teachers who had one to three years of teaching experience in trade and industrial education.

These teams first refined and revised the existing competency statements and their assessment criteria. Then they categorized the competencies into seven major areas. The final list contained 28 competencies and criteria considered necessary for preservice industrial teachers in Florida.

The workshop participants also reviewed and evaluated instructional materials from numerous CBTE programs throughout the nation. Materials consistently considered to be appropriate and ready to use, with minor modifications, in a Florida program of Competency-Based Industrial Teacher Education were developed by the Ohio State University Center for Vocational Education, the Dade County Florida Public School System, and the Florida Panhandle Area Education Cooperation (PAEC). These materials were considered a significant core which could be readily adapted to fit the preservice training needs of Florida's industrial teachers.

Phase II

Purposes

Phase II of the trade and industrial teacher certification project was a continuation of Phase I and was designed to:

1. Plan and organize a competency-based preservice industrial education certification program.

2. Plan a competency-based inservice program for staff development for industrial education teachers.

3. Establish a university level competency-based teacher education program.

4. Determine alternatives for funding competency-based teacher education.

Advisory Committee Functions

During Phase II, the statewide advisory committee continued to provide guidance and direction to the competency identification process. The statewide advisory committee members are listed below:

Dr. Robert Andreyka, Chairman	Florida State University
Dr. H. C. Beacham	Florida A & M University
Dr. William Blank	Florida State University
Dr. Raymond Hill	University of South Florida
Mr. Frank House	Florida Industrial Education Association
Mr. Paul Kretzschmar	Dade County Schools
Dr. Warren Leffard	University of West Florida
Dr. Patricia Lutterbie	Board of Regents
Dr. Douglas McBriarty	Pinellas County Schools
Dr. Robert Paugh	Florida Technological University
Mr. Talmadge Rushing	Department of Education
Dr. Samuel Russell	University of North Florida
Mr. Ronald Scull	Department of Education
Mr. Jerry Spurlin	Department of Education
Dr. Henry Ziel	Florida International University

Members of the statewide advisory committee focused their efforts on reviewing and validating the activities of four strategically located regional committees organized to: (a) plan preservice and (b) inservice programs of competency-based industrial teacher education; (c) determine funding alternatives for CBTE; and (d) develop a university level CBTE program. To fulfill responsibilities, each regional committee team planned, organized, and reported regional activities at regularly scheduled monthly statewide advisory committee meetings. The cooperating universities and local county education agency representatives for the regional committees included:

1. Preservice CBTE Program Regional Committee:

   Florida Technological University
   University of South Florida
   Pinellas County Schools

2. Inservice CBTE Program Regional Committee:

   University of North Florida
   University of West Florida
   Florida A & M University

3. CBTE Funding Alternatives Regional Committee:

   Dade County Schools
   Florida International University

4. University Level CBTE Regional Committee:

   Florida State University

Preservice Program Regional Committee

This advisory committee re-examined 28 entry level competencies required of preservice industrial education teachers as developed in Phase I. These competencies formed the foundation of the competency-based industrial teacher education program. The regional committee chairman, Dr. Robert Paugh, Florida Technological University, was charged with the responsibility to further develop these competencies into a planned, organized competency-based preservice industrial teacher education workshop. The vehicle employed for carrying out this charge was the establishment of three mini-conferences held in Lakeland and Orlando.

Inservice Program Regional Committee

Florida A & M University, the University of North Florida and the University of West Florida were assigned the task of

developing inservice competencies and criteria for first-year industrial teachers. The chairman of this committee was Dr. Warren L. Leffard, University of West Florida.

The committee reviewed and refined the regional inservice competencies identified in Phase I. Based on this review, recommendations were made to the statewide advisory committee for revising the original inservice competencies.

University Level Committee

This committee focused on developing and implementing a CBTE program for T&I teachers in the traditional university setting. The university-based program was based on the preservice and inservice competencies identified and refined by the preservice and inservice committees.

CHAPTER 4

FINDINGS AND DISCUSSION - COMPETENCIES

This chapter presents the professional competencies that make up the competency-based teacher education program for Florida's T&I teachers. These competencies were the result of Phase I identification and validation of entry level competencies discussed earlier, re-examination of entry level competencies by the preservice committee and additions by the inservice committee. Finally, the university-level committee further refined the competencies for inclusion in a university-based CBTE program.

Table 1 lists these competencies as well as whether each competency will be taken to the awareness, practice or real school situation during the preservice and inservice portion of the field-based program.

The reader should note that in Table 1, an upper case x denotes the level to which each competency will be taken in either the preservice or inservice portion of the CBTE program. For example, competency B-5, "Select an appropriate teaching method" will be taken to the awareness level in the preservice portion. During the preservice workshop, instructors will be made aware of the principles underlying the selection of appropriate media and methods. This competency will be taken to the practice and real-school levels during the inservice portion. The preservice workshop will be followed by an inservice portion of the program in which instructors will be given a chance to practice selection of methods with supervision and feedback from a qualified resource person. When the instructor feels confortable with method selection, he will be assessed in a real-school situation involving the actual selection of methods for teaching a student performance objective.

Table 1

Competencies Included in CBTE Program
For Florida's Trade and Industrial Teachers

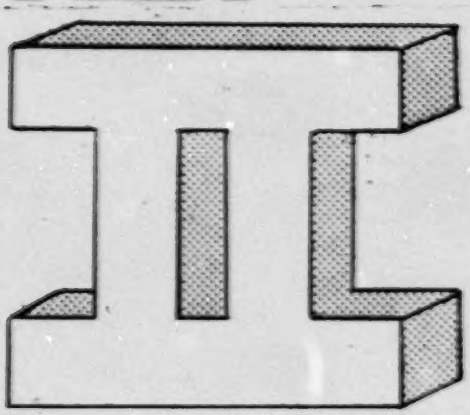
Preservice A	Preservice P	Preservice R	Inservice A	Inservice P	Inservice R	Item	Competency
						Category A[a]:	Orientation To Vocational Teaching - designed to give the instructor a brief overview of vocational teaching.
X						1.	Aware of the purpose of this teacher education program.
X						2.	Aware of the purpose and principles of Vocational Education.
X						3.	Aware of the purpose and scope of Trade and Industrial Education.
X						4.	Aware of teacher responsibilities.
X						5.	Aware of the steps in planning the instructor's work.
X						6.	Aware of district and local school policy and organizational structure.
X						7.	Aware of the student vocational organization.
X						8.	Aware of opportunities for professional growth, i.e., professional organizations, etc.
						Category B:	Preparation for Instruction - principles and techniques of planning and organizing instructional materials and preparing and motivating students to learn.
			X	X	X	1.	Analyze an occupation.
X				X	X	2.	Write and sequence student performance objectives
			X	X	X	3.	Plan a unit of instruction.
X	X				X	4.	Write a lesson plan.
X				X	X	5.	Select an appropriate teaching method.
			X	X	X	6.	Select and obtain instructional materials.
			X	X	X	7.	Prepare instructional materials.
			X	X	X	8.	Develop course of study.
						Category C:	Presentation of Instruction - principles and techniques for helping students master instructional objectives.
X	X				X	1.	Present a manipulative lesson.
X	X				X	2.	Present a related lesson.
X	X				X	3.	Employ oral questioning techniques.
X	X				X	4.	Present information with illustrated talk.
X	X				X	5.	Conduct group discussions.
X	X				X	6.	Present information with chalkboard.
X	X				X	7.	Present information with overhead projector.
X	X				X	8.	Present information using models/real objects.
			X	X	X	9.	Present information with films.
			X	X	X	10.	Present information with filmstrips/slides.
			X	X	X	11.	Illustrate with bulletin boards and exhibits.
			X	X	X	12.	Individualize instruction.
			X	X	X	13.	Conduct field trips.
			X	X	X	14.	Utilize resource person.
			X	X	X	15.	Employ brainstorming techniques.
			X	X	X	16.	Employ team teaching.
						Category D:	Application of Learning - principles and techniques for helping students apply what they have learned.
X				X	X	1.	Direct problem solving activities.
			X	X	X	2.	Direct shop/laboratory experience.
			X	X	X	3.	Direct student study.
			X	X	X	4.	Direct students in instructing other students.
			X	X	X	5.	Employ technique of simulation.
			X	X	X	6.	Employ technique of role playing.

[a]This category taken to Awareness (A) level only. All other categories taken to Practive (P) and Real-school (R) levels.

Table 1 (continued)

Preservice A	Preservice P	Preservice R	Inservice A	Inservice P	Inservice R		
						Category E:	Evaluation - principles and techniques for evaluating students' mastery of instructional objectives.
X	X				X	1.	Assess student skill in shop/laboratory.
X	X				X	2.	Assess student knowledge in classroom.
			X	X	X	3.	Assess important student attitudes.
X				X	X	4.	Determine student grades.
X				X	X	5.	Conduct follow-up study to evaluate program effectiveness.
			X	X	X	6.	Evaluate instructional effectiveness.
						Category F:	Classroom/Laboratory Management - principles and techniques of managing time, materials, equipment, supplies, etc. for safe and effective mastery of instructional objectives.
X	X				X	1.	Organize and maintain the vocational classroom.
X	X				X	2.	Organize and maintain the vocational laboratory.
X	X				X	3.	Establish and maintain a filing system.
X	X				X	4.	Establish and maintain a student progress record.
X	X				X	5.	Provide for the safety/first aid needs of vocational students.
X	X				X	6.	Manage equipment and supplies.
			X	X	X	7.	Project instructional resource needs.
			X	X	X	8.	Arrange for expanding facilities.
						Category G:	Human Relations - principles and techniques for effectively communicating with students, parents, colleagues, administration, community and others with whom the instructor must deal.
X				X	X	1.	Communicate with students, other teachers, administrators and laymen.
X				X	X	2.	Determine needs and interests of students.
X				X	X	3.	Relate to students to facilitate learning.
X				X	X	4.	Assist students in developing self-discipline.
X				X	X	5.	Employ reinforcement techniques in interpersonal relations.
X				X	X	6.	Demonstrate positive interpersonal relations within the school system.
			X	X	X	7.	Maintain occupational advisory committee.
			X	X	X	8.	Sponsor the student vocational organization.
			X	X	X	9.	Help students secure job or further education.
			X	X	X	10.	Utilize student personnel services or outside agencies to meet student needs.
						Cateogry H:	Professional Role - designed to help the teacher develop a professional philosophy and the skills needed to increase professional and occupational competencies.
			X	X	X	1.	Express and display a personal philosophy consistent with the principles of vocational education.
			X	X	X	2.	Utilize opportunities for professional growth, i.e., professional organizations, etc.
			X	X	X	3.	Develop a plan to keep up-to-date in the occupational specialty.

PART II



TRADE AND INDUSTRIAL EDUCATION COMPONENT- Criteria Identification

CHAPTER 5

METHODOLOGY FOR IDENTIFYING CRITERIA

Need

In order to fully implement a competency-based program, a means of assessing competency mastery should be developed. Among the elements of a CBTE program identified by Elam (1971) is the use of assessment criteria which: (1) are based upon specified competencies, (2) state expected levels of mastery under specified conditions, and (3) are made public in advance. Assessment criteria may allow objective assessment of competency mastery based primarily on the performance of the trainee.

Dodl and Schalock (1973) stated that the criteria for ". . . assessing what a prospective teacher can do (performance) should be as rigorous, as systematically derived, and as explicitly stated as the criteria for assessing either what he knows (knowledge) or what he can achieve in learners." The authors added that traditional teacher education programs have relied heavily on knowledge criteria but that performance criteria will constitute a major force for innovation in education during the next decade.

Purpose

The purpose of this phase of the project was to develop objective, specific assessment criteria for those competencies that are important to Florida's vocational T&I teachers. These criteria may then be used by evaluators to objectively assess whether individuals have mastered these competencies. Such criteria might be useful for preservice assessment of certain competencies in a university-based program or for inservice assessment for staff development, needs assessment, promotion and similar uses.

The project staff developed several parameters for assessment criteria that would be developed. These parameters, it was felt, would help to operationalize the competency-based program by taking much of the subjectivity out of assessment. These parameters for assessment criteria should:

1. Include all key elements of the competency
2. Be based entirely on the competency itself
3. Be stated in past tense

4. Require only a "yes" or "no" response

5. Be as objective as possible

Criteria Identification and Validation

The statewide committee through the preservice, inservice and the university-based regional committees developed the competency criteria. The preliminary criteria for the preservice competencies were identified during Phase I (Andreyka, 1975). Refinement of these preliminary criteria was accomplished through the preservice regional committee. Further refinement was accomplished through the statewide advisory committee.

The preliminary criteria for the inservice competencies were developed by the inservice committee. These developed preliminary criteria were then screened and refined by the statewide advisory committee. A final screening and refinement of both the preservice and inservice criteria was conducted through the university-based regional committee.

Table 2 lists the assessment criteria for the competencies important to T&I instructors in Florida.

The reader should note that these assessment criteria were patterned after the Performance-Based Vocational Teacher Education Modules developed by the Center for Vocational Education, The Ohio State University, Columbus, Ohio. These CBTE curricular materials were used to aid in the development of assessment criteria since these modules were selected by the statewide advisory committee as the curricular materials to be used during both the preservice and inservice portions of the competency-based program for Florida's T & I teachers.

These materials had received the highest ratings by participants in a workshop discussed earlier (Andreyka, 1975) in which teacher educators, teachers, administrators and supervisors reviewed and evaluated CBTE materials from throughout the United States.

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Table 2

Assessment Criteria for Competencies
Important to Florida's T&I Teachers

Category A: Orientation to Vocational Teaching

1. Aware of the purpose of this teacher education program.

Terminal Objective: The instructor demonstrated an awareness of the purpose of this teacher education program.

a. Explained the need for the professional preparation of trade and industrial education teachers.
b. Explained the rationale for certification of teachers.
c. Identified the present certification requirements for T&I teachers in Florida.
d. Explained the differences between this CBITE program and the traditional course approach to certification.

2. Aware of the purpose and principles of Vocational Education.

Terminal Objective: The instructor demonstrated an understanding of the purpose of principles of vocational education.

a. Explained the relationship between the labor needs of business and industry and the goals and objectives of vocational education.
b. Explained the importance of vocational education for the livelihood, advancement and personal satisfaction of citizens.
c. Identified factors which led to the federal support of vocational education.
d. Determined differences and similarities between vocational and practical arts education.
e. Identified the major provisions of major federal and state laws relating to vocational education.

3. Aware of the purpose and scope of Trade and Industrial Education.

Terminal Objective: The instructor demonstrated an understanding of the purpose and scope of Trade and Industrial Education.

a. Gave a concise definition of T&I education.
b. Described the relationship between T&I education and the skilled and semi-skilled labor needs of industry.
c. Explained the importance of developing good attitudes and leadership abilities necessary in T&I occupations.
d. Discussed Prosser's theorems as they relate to T&I education.

4. Aware of teacher responsibilities.

Terminal Objective: The instructor demonstrated an awareness of his/her responsibilities as a teacher.

a. Described teacher responsibilities which relate to students including teaching, guidance, development of attitudes toward work, placement, safety and others.
b. Described teacher responsibilities which relate to the school including teaching, record keeping, service, curriculum development, professional growth, program evaluation, and others.
c. Described teacher responsibilities which relate to the community including training/re-training of workers, service to the community and others.

5. Aware of the steps in planning the instructor's work.

Terminal Objective: The instructor demonstrated an awareness of the steps in planning his/her work.

a. Described the purpose of the community survey.
b. Described the purpose of the student interest survey.
c. Described the purpose of the craft advisory committee.
d. Described the purpose of the occupational analysis.
e. Described the purpose of student performance objectives.
f. Described the purpose of unit and lesson plans.
g. Described the purpose of instructional materials.
h. Described the purpose of each step in the four step method of teaching.

6. Aware of district and local school policy and organizational structure.

Terminal Objective: The instructor demonstrated an awareness of district and local school policy and organizational structure.

a. Secured an up-to-date copy of appropriate district and/or school policy manual.
b. Demonstrated ability to use policy manual to determine appropriate district and/or school policy on particular subject.

Table 2 (continued)

Category A: Orientation to Vocational Teaching (continued)

c. Prepared an organizational chart for district listing names and major positions from school board down to individual teachers.
d. Prepared an organizational chart for school listing names and major positions from principal/director down to individual teachers.

7. Aware of the student vocational organization.

Terminal Objective: The instructor demonstrated an awareness of the student vocational organization for T&I Education.

a. Described the overall goals and objectives of VICA.
b. Discussed the advantages of VICA to the T&I instructor and the student.
c. Identified the VICA contact person in district and state.
d. Developed plans to include VICA co-curricular activities in the T&I program.

8. Aware of opportunities for professional growth, i.e., professional organizations, etc.

Terminal Objective: The instructor demonstrated an awareness of opportunities for professional growth.

a. Discussed the advantages of utilizing opportunities for professional growth.
b. Identified the goals of NEA, AVA, FVA, FIEA.
c. Identified professional meetings, conferences, seminars, etc. scheduled in district, state and nation which may directly contribute to professional growth.
d. Identified journals, publications, etc. that would directly contribute to professional growth.
e. Identified staff development opportunities for T&I teachers offered by school, district, teacher center, university or other institution/agency.

Category B: Preparation for Instruction

1. Analyze an occupation.

Terminal Objective: For the occupation to be taught, the instructor conducted an occupational analysis.

a. A complete job description was written.
b. A comprehensive list of preliminary duty and task statements was written.
c. Task statements are clear and concise and could be rated in terms of time spent, etc.
d. The initial task listing was reviewed by workers and/or supervisors and revised.
e. Revised version was reviewed by workers and/or supervisors.
f. Individuals with expertise in the occupation were chosen to verify listing.
g. The final inventory and detailed instructions was prepared and distributed for verification.
h. Results were analyzed and reported.
i. A final report of the analysis was prepared.

2. Write and sequence student performance objectives.

Terminal Objective: Based on appropriate course content, the instructor wrote and sequenced student performance objectives.

a. Objectives included a specific statement of student performance.
b. Objectives included stated or implied conditions.
c. Objectives included specified criteria for successful performance.
d. Objectives were arranged in logical sequence.
e. Enabling objectives led to performance of terminal objectives.
f. Objectives were sequenced based on needs and abilities of students.

3. Plan a unit of instruction.

Terminal Objective: Based on closely related student performance objectives, the instructor developed a unit of instruction.

a. Students were involved in planning the unit.
b. The unit included performance objectives based on student needs and abilities, student characteristics, occupational analysis and time and facilities available.
c. Content outline for unit was developed.
d. Related technical content for unit was correlated with student laboratory experiences.

Table 2 (continued)

Category B: Preparation for Instruction (continued)

e. Learning experiences for unit were based on individual differences of students.
f. Methods for evaluating student performance throughout unit were selected.

4. Write a lesson plan.

Terminal Objective: For a student performance objective in a unit of instruction, the instructor developed a lesson plan.

a. The lesson plan was based on and included student performance objective(s).
b. The introduction to the lesson was prepared.
c. Motivational techniques were included.
d. A content outline was included.
e. Learning activities were derived from the content outline.
f. Teaching methods were specified for each learning activity.
g. A summary of the lesson was included.
h. Evaluation techniques/devices were specified.
i. Resource materials were specified.

5. Select an appropriate teaching method.

Terminal Objective: For a student performance objective, the instructor selected appropriate teaching method(s).

a. The advantages and disadvantages of various teaching methods were analyzed in regard to meeting student performance objectives.
b. Characteristics and individual differences of students were considered.
c. Time, resources, availability of media and equipment were considered.

6. Select and obtain instructional materials.

Terminal Objective: Based on a lesson plan for teaching a student performance objective, the instructor selected and obtained instructional materials.

a. Materials matched the lesson objectives.
b. Materials fit the instructional methods.
c. Content of materials was accurate, up-to-date and properly sequenced.
d. Material was suited to level of students.
e. Reproduction was of good quality.

7. Prepare instructional materials.

Terminal Objective: Based on a lesson plan for teaching a student performance objective, the instructor prepared instructional materials.

a. Students were involved in planning and/or preparation of materials.
b. Materials match lesson objectives.
c. Materials match students' interests and abilities.
d. Materials were legible, well developed, logical, and accurate.
e. Duplicated materials were reproduced in economical and quality manner.

8. Develop course of study.

Terminal Objective: For the vocational course offering, the instructor developed a course of study including:

a. Title of course.
b. Detailed job description for which course is designed.
c. Description of duties and tasks included in course.
d. Description of target population.
e. Course prerequisites.
f. Pre-test evaluation devices.
g. Post-test evaluation devices.
h. Description of all units of instruction.
i. Specific student performance(s) for each task.
j. Detailed lesson plans for each unit of instruction.

Category C: Presentation of Instruction

1. Present a manipulative lesson.

Terminal Objective: For a student performance objective, the instructor demonstrated the appropriate manipulative skill(s).

Table 2 (continued)

Category C: Presentation of Instruction (continued)

a. A detailed lesson plan was utilized.
b. The scope of the demonstration was limited.
c. Students were introduced to the skill and motivated to learn.
d. The physical environment was comfortable.
e. All tools, equipment, supplies were at hand.
f. Each step was demonstrated in proper sequence and explained.
g. Safety practices were pointed out.
h. Visuals were used to clarify intricate steps.
i. Time consuming steps were begun ahead of time.
j. Procedure followed was that used in field.
k. All students could see each step and hear instructor.
l. Instructor asked key questions to assure student understanding.
m. Instructor summarized key steps and points.

2. Employ oral questioning techniques.

Terminal Objective: For a student performance objective, the instructor presented information using oral questioning techniques.

a. Oral questions were used to stress important points, to encourage contributions from the students' own experiences, to check errors in thinking, to direct thinking of students, and to discover special abilities of individual students.
b. Questions were directed to the entire class before calling upon an individual for a response.
c. Students were given an opportunity to think about the question and to formulate an answer and then an individual student was called upon to answer.
d. Each student was given an opportunity to participate, based on his ability and past experience.
e. Questions were presented in a logical sequence to maintain continuity of ideas.
f. Questions requiring only a "yes" or "no" answer were used sparingly.
g. The teacher repeated the student's answer only if there was a need for special emphasis or clarity.
h. The questions used were concise and included only one idea.
i. Attention and consideration were given to each student's response.
j. Various types of simple recall and thought level questions were employed in the lesson.

3. Present information with illustrated talk.

Terminal Objective: For a student performance objective, the instructor presented information with an illustrated talk.

a. Material was selected based on students' present level of understanding.
b. The purpose of talk was explained.
c. Students were prepared to receive the information.
d. Instructor talked in relaxed, clear, audible voice, and avoided distracting mannerisms.
e. Verbal and non-verbal cues were used to monitor students' understanding.
f. Attention of students was held by using examples, experiences, anecdotes, analogies, and frames of reference.
g. Key points were illustrated with verbal and/or visual illustrations.
h. Instructional media and aids were used to emphasize or clarify key points.
i. Eye contact with students was maintained.
j. Important points were summarized.
k. Student feedback was solicited to evaluate their understanding of information presented.

4. Conduct group discussions.

Terminal Objective: For a student performance objective, the instructor presented information using group discussion techniques.

a. The instructor involved and guided students in determining topic for discussion.
b. The physical setting was arranged so all were comfortable and could see and hear.
c. The instructor introduced the topic and explained the purpose of the discussion.
d. The instructor kept the discussion on the topic and attempted to get balanced participation.
e. The instructor summarized key points.

5. Present information with chalkboard.

Terminal Objective: For a student performance objective, the instructor presented informatio using the chalkboard.

Table 2 (continued)

Category C: Presentation of Instruction (continued)

a. The chalkboard material aided in achieving the student performance objective.
b. Detailed information to be used later was put on the board before class and revealed at appropriate time.
c. Chalkboard illustrations and writing were legible, glare-free, and visible to all students.
d. The teacher maintained eye contact with students while using the chalkboard.
e. Chalkboard material was presented in a well organized, sequenced manner.
f. Colored chalk was used to enhance material presented.
g. Chalkboard was used effectively to introduce topic, present facts or concepts, emphasize key points, and list steps.
h. Any special techniques were utilized effectively.

6. Present information with overhead projector.

Terminal Objective: For a student performance objective, the instructor presented information using an overhead projector.

a. Projector was set up and focused before presentation so all could see and hear.
b. All equipment, materials, spare bulb were assembled.
c. The projected image had no key-stoning, was clear, well focused and centered on screen.
d. The transparencies used were appropriate for lesson.
e. Transparencies contained only a few key points and were clear and readable.
f. Transparencies were presented in logical sequence.
g. Instructor maintained eye contact with students and used revelation, pointer, colored marking pens and on-off switch effectively.

7. Present information using models/real objects.

Terminal Objective: For a student performance objective, the instructor presented information with models/real objects.

a. The model or object was appropriate for lesson and aided students in meeting the performance objective.
b. The model used fully represented the real object.
c. The model had cut-aways, moving parts, colors, etc. to clarify design and function of the object.
d. The real object used was fully explained to the students.

8. Present information with films.

Terminal Objective: For a student performance objective, the instructor presented information using films.

a. The film used aided students in meeting the objective.
b. The equipment and room was set up in advance so all could see and hear.
c. The manufacturer's guidelines for set-up and operation were followed.
d. The instructor prepared students for the film and introduced its content.
e. The projected image was well focused, had no key-stoning, was centered and was readable.
f. The film was interesting, up-to-date, accurate and was of good quality.
g. The instructor summarized the points made by film.

9. Present information with filmstrips/slides.

Terminal Objective: For a student performance objective, the instructor presented information using filmstrips/slides.

a. The filmstrip/slides used aided students in meeting the objective.
b. The equipment and room was set up in advance so all could see and hear.
c. The manufacturer's guidelines for set-up and operation were followed.
d. The instructor prepared students for the filmstrips/slides and introduced its content.
e. The projected image was well focused, had no key-stoning, was centered and readable.
f. The filmstrips/slides were interesting, up-to-date, accurate and of good quality.
g. The filmstrips/slides were well paced.
h. The instructor summarized key points.

10. Illustrate with bulletin boards and exhibits.

Terminal Objective: For a student performance objective, the teacher presented information with bulletin boards and exhibits.

a. The display was directly related to performance objectives.
b. The display consisted of educational materials and/or information.

Table 2 (continued)

Category C: Presentation of Instruction (continued)

c. The exhibit or bulletin board was selected to satisfy motivation, clarification of information, stimulation of thought, presentation of concepts, initiation of discussions and reinforcement of learning.
d. Students were involved in the planning and development of the exhibit or bulletin board.

11. Individualize instruction.

Terminal Objective: For a student performance objective, the instructor provided individualized instruction.

a. The mechanics of the individualized unit of instruction was well planned and fully explained to students including location of materials, teacher's and students' responsibilities, due dates and classroom procedures.
b. The unit was based on the needs and abilities of individual students.
c. Performance objectives were stated clearly.
d. Learning activities and materials aided students in meeting objectives.
e. A variety of media and materials were used.
f. Activities were self-paced.
g. Resource materials were easily accessible.
h. The instructor aided students when needed.
i. The instructor encouraged students to make decisions.
j. Large group instruction was used sparingly.
k. Students were evaluated on performance in relation to objectives.

12. Conduct field trips.

Terminal Objective: For a student performance objective, the teacher presented information using a field trip.

a. Pre-planning for the field trip was provided to identify desired outcomes.
b. Cooperation and participation of the agency to be visited was obtained.
c. School policies and guidelines were reviewed and abided by.
d. Student input was sought during formulation of learning outcomes.
e. An orientation session stressing key points was held prior to the field trip.
f. Guidance and supervision during the field trip was provided.
g. A follow-up session was provided for critique and evaluation of the trip.

13. Utilize resource person.

Terminal Objective: For a student performance objective, the teacher presented information utilizing a resource person.

a. Selection of the resource person was made on the basis of his/her ability to aid students in meeting the performance objective.
b. The resource person was made aware of the objective, background and abilities of students and specific topics to cover.
c. The resource person was introduced to students.
d. The resource person's presentation was directly related to objective.
e. Following the presentation, the instructor guided students in reviewing and summarizing points made by resource person.

14. Employ brainstorming techniques.

Terminal Objective: For a student performance objective, the instructor presented information utilizing the brainstorming technique.

a. The brainstorming activity aided students in meeting the performance objective.
b. The purpose and procedures of the session were explained.
c. The topic was introduced and clarified.
d. Small groups and group leaders were selected.
e. Contributions by all students were encouraged.
f. The session was summarized and brought to a close.

15. Employ team teaching.

Terminal Objective: For a student performance objective, the instructor presented information utilizing team teaching.

a. Planning involved input and cooperation from all members of the teaching team.
b. Three degrees of individualization were used: large group, small group, and individualized.
c. Large group instruction was used for introduction and generalities in the learning process.
d. Small group (seminar-type classes) instruction was used for more specific instruction.

Table 2 (continued)

Category C: Presentation of Instruction (continued)

e. Independant study was used for in depth coverage of subject matter of special interest to the student.
f. Participation from each team member represented a fair distribution of required time and an appropriate use of talents.

Category D: Application of Learning

1. Direct problem solving activities.

Terminal Objective: For a student performance objective, the teacher directed problem solving activities.

a. The problem solving activities aided students in meeting the objective.
b. Students were aided in identifying and stating the problem, identifying sources for information, identifying possible solutions, evaluating the potential results of possible solutions, selecting a tentative solution, testing the solution, and assessing the results of testing the solution.
c. The instructor aided in summarizing key points of the lesson and solutions to the problem that were formulated.

2. Direct shop/laboratory experience.

Terminal Objective: For a student performance objective, the teacher directed a shop or laboratory experience.

a. The shop or laboratory activity aided students in meeting the performance objective.
b. Students were introduced to the shop/laboratory activity and its purpose was explained.
c. Instruction sheets were utilized, and had clear instructions, listed all steps in proper sequence, noted all critical points and safety precautions, specified acceptable standards of performance, and had illustrations to clarify key points.
d. Each work station was equipped with all tools, materials and supplies necessary.
e. The instructor visited work stations and offered assistance if needed.
f. The instructor maintained control of the shop/laboratory.
g. Students were evaluated based on criteria specified on instruction sheets.

3. Direct student study.

Terminal Objective: For a student performance objective, the teacher directed student study.

a. Students were involved in formulating student study assignments.
b. The assignment related to the performance objective.
c. The assignment was explained to students.
d. Criteria for evaluating assignment were explained.
e. Materials and resources were provided if needed.
f. Assignment and information sheets were provided.
g. During study sessions, the instructor maintained an orderly atmosphere and circulated among students to offer assistance.

4. Direct students in instructing other students.

Terminal Objective: For a student performance objective, the instructor directed students in instructing other students.

a. Students were selected to provide instruction based on their advancement beyond the group or special abilities of particular students.
b. The instruction was based on definite plans developed by the instructor.
c. Progress of students receiving instruction was monitored.

5. Employ technique of simulation.

Terminal Objective: For a student performance objective, the instructor presented information using simulation techniques.

a. The simulation activity aided students in meeting the performance objective.
b. The simulation represented accurately the real-life situation or operation.
c. Students were introduced to the simulation.
d. The instructor aided in carrying out the simulation.
e. The simulation was reviewed and key points summarized.

Table 2 (continued)

Category D: Application of Learning (continued)

6. Employ technique of role playing.

Terminal Objective: For a student performance objective, the instructor presented information using role playing technique.

a. The role playing situation aided students in meeting the performance objective.
b. Students were introduced to the role playing activity.
c. Participants for various roles were selected.
d. The instructor supervised the role playing activity based on definite plans.
e. The role playing activity was terminated after roles had been played successfully.
f. The major points covered in the role playing activity were summarized.

Category E: Evaluation

1. Assess student skill in shop/laboratory.

Terminal Objective: Based on a student performance objective, the instructor assessed student skill.

a. The test was appropriate for the psychomotor performance objective.
b. The problem or situation was clearly and completely stated.
c. All needed supplies and equipment were specified.
d. Appropriate checklists and rating scales were included.
e. Checklists and rating scales included clear instructions.
f. Checklist and rating scale items were clear and concise.
g. Checklist items were arranged in proper sequence.
h. Checklist items covered all important steps in the process.
i. Rating scale used was easily interpreted.
j. The test was well constructed and efficient to administer.
k. The environment was arranged to avoid distractions for student taking test.
l. The test was fully explained to the student.

2. Assess student knowledge in classroom.

Terminal Objective: Based on a student performance objective, the instructor assessed student knowledge.

a. Test items were based on student performance objectives.
b. Items were written at appropriate level for cognitive objectives.
c. Test items were written at students' level of comprehension.
d. The following items were written following guidelines of good test construction: essay, true-false, completion, matching, multiple choice, case study, problem solving, and oral response.
e. Directions were complete and easy to follow.
f. The environment was conducive to taking the test.
g. The instructor fully explained the test, its purpose, and grading.
h. All specific instructions were given.

3. Assess important student attitudes.

Terminal Objective: Based on a student performance objective, the instructor assessed student attitudes and values.

a. Test items were based on the affective performance objective.
b. All items were at students' comprehension level.
c. Grading key or model responses were developed.
d. Specific instructions were given.
e. Items required solving of problems, essay answers, oral or other responses requiring more than yes or no response.
f. Test was administered in a non-threatening manner.

4. Determine student grades.

Terminal Objective: The instructor developed a grading system to grade student performance in the vocational program.

a. The grading system was based on student performance objectives.
b. The grading system was inclusive of student performances and experiences in all areas.
c. The grading system was acceptable to the school-wide grading criteria and was compatible to other vocational grading systems.

Category E: Evaluation (continued)

d. Students were informed at the beginning of the course of the mechanics of the grading system.
e. Student performance records and scores of tests or evaluations were maintained on file.

5. Conduct follow-up study to evaluate program effectiveness.

Terminal Objective: The instructor utilized a student follow-up system to evaluate the effectiveness of the vocational program.

a. Approval was gained to conduct study.
b. Various groups were involved including students, teachers, advisory committee, administration and others.
c. A determination was made of the type of data desired.
d. The objectives and target population of the study were clearly identified.
e. All necessary letters, forms, etc. were developed.
f. The survey instrument was developed.
g. The survey was conducted following accepted guidelines for sampling, mailing, etc.
h. Survey results were analyzed and reported.

6. Evaluate instructional effectiveness.

Terminal Objective: The instructor utilized a system to evaluate his/her instructional effectiveness.

a. Evaluation information was gained from a variety of sources including teachers, students, administrators, supervisors, self.
b. A systematic plan for evaluating instructional effectivness was developed.
c. Appropriate evaluation devices and techniques were utilized.
d. Student achievement in the vocational program was evaluated.
e. Evaluation data were gained by using written evaluation from students, student discussion, classroom observation by other teachers or administrators, video taping of instruction or other means.
f. Results of evaluation was used directly to improve instruction.

Category F: Classroom/Laboratory Management

1. Organize and maintain the vocational classroom.

Terminal Objective: Based on requirements of the vocational program and appropriate guidelines, the instructor organized and maintained the vocational classroom.

a. A seating arrangement was established appropriate for the instructional activities.
b. Custodial staff was made aware of required maintenance and cleaning.
c. Heat, light and ventilation were adjusted to accommodate the size and activity of the class.
d. Provisions were made for study space, work area and materials storage for each student.
e. Instructional resources were available for student use.

2. Organize and maintain the vocational laboratory.

Terminal Objective: Based on the requirements of the vocational program and appropriate guidelines, the instructor organized and maintained the vocational laboratory.

a. Broad program goals and student performance objectives were reviewed in planning the organization of the laboratory.
b. Advisory committee recommendations were considered.
c. Local, state and national health and safety regulations were followed.
d. State standards were adhered to.
e. Laboratory resembled closely the real world setting.
f. The laboratory had suitable environmental conditions.
g. Adequate work area was provided for students.
h. Storage space and clean-up facilities were provided.
i. Space for the safe and efficient storage of equipment and supplies was available.
j. The instructor could easily see all work stations.
k. The general layout facilitated instruction.

3. Establish and maintain a filing system.

Terminal Objective: The instructor maintained a filing system for records, instructional materials, etc.

Category F: Classroom/Laboratory Management (continued)

a. Adequate filing space was provided.
b. All compartments were clearly labeled.
c. Student attendance records and grades were kept up-to-date following school policy.
d. Student files were kept up-to-date.
e. Student use files were arranged for easy use by students.
f. Used material was promptly re-filed.
g. Entire filing system was kept up-to-date.

4. Establish and maintain a student progress record.

Terminal Objective: For a series of student performance objectives, the instructor established and maintained a student progress record.

a. Terminal student performance objectives were included on progress chart.
b. Progress chart was displayed and kept accurate and up-to-date.
c. Method of recording indicated for each individual, the date of mastery for each objective.

5. Provide for the safety/first-aid needs of vocational students.

Terminal Objective: For a vocational education program, the instructor provided for the safety and first-aid needs of students.

Safety:

a. The classroom and laboratory conformed to all applicable safety regulations.
b. Proper guards, eye protection and clothing were provided for use in laboratory.
c. The instructor emphasized key safety points during each skill demonstration.
d. Students demonstrated their understanding of all shop safety rules.
e. The instructor kept records of students' exposure to safety rules.

First Aid:

a. A systematic first aid plan was developed based on applicable policy and regulations.
b. The instructor was trained in emergency first aid procedures.
c. Emergency telephone numbers were posted in conspicuous places.
d. Appropriate first aid notices were posted.
e. Parents and administration were informed of any emergency.
f. Appropriate accident reports were completed.
g. Complete first aid equipment and supplies were secured and maintained.
h. Students were informed of emergency first aid procedures.
i. Instructor maintained adequate liability coverage.

6. Manage equipment and supplies.

Terminal Objective: The instructor managed equipment and supplies for the vocational program.

a. An inventory of tools, supplies, and equipment was maintained including:

(1) Accurate and adequate identification.
(2) Feasible procedures for adding new items to the inventory.
(3) Feasible procedures for eliminating unusable or expended items from the inventory.

b. A system for repair and service of tools and equipment included:

(1) Schedule for routine repair and service
(2) Periodic protective maintenance based on manufacturer's service manuals and warranties.
(3) Listing of authorized repair and service representatives.
(4) Implementation of routine repairs and services by the instructional program when within capabilities.
(5) Plan for emergency repair and service.
(6) Plan for major repairs and services.
(7) Record of all repairs and services.

c. Arrangement for storage and security of supplies and equipment included:

(1) Identification of storage needs.
(2) Locked storage for portable equipment and supplies
(3) Display of safety regulation in storage.
(4) Procedures for maintaining order in the storage area.

Table 2 (continued)

Category F: Classroom/Laboratory Management (continued)

7. Project instructional resource needs.

Terminal Objective: For a vocational program, the instructor projected instructional resource needs for the future.

a. A current inventory of supplies, tools, equipment, etc. on hand which also denoted the condition and location was maintained.
b. Resource requirements for supplies, tools, equipment, etc. based on student performance of lectures, enrollment projections, occupational requirements, etc. were established.
c. Needs were determined through comparison of the inventory and resource requirements.
d. Needs were prioritized and listed in each category, i.e. tools, supplies, equipment, etc.
e. Recommendations for additions to the school library (reference books, magazines, periodicals) were submitted.
f. Short and long range resource needs were communicated to appropriate individuals.

8. Arrange for expanding facilities.

Terminal Objective: For actual or projected needs, the instructor arranged for expanding facilities.

a. Existing facilities were evaluated.
b. The determination of projected facility requirements, based on enrollment projections, changes or additions in curriculum to meet facility standards was made.
c. Existing facilities and projected needs were compared and discrepancies were determined.
d. Discrepancies were prioritized and listed.
e. Based on priorities, action was initiated to obtain needed facilities.

Category G: Human Relations

1. Communicate with students, other teachers, administrators, laymen.

Terminal Objective: The instructor demonstrated his/her ability to communicate effectively with students, teachers, administrators and laymen.

a. The instructor utilized written forms of communication that were appropriate, accurate, well written and gramatically correct.
b. The instructor used verbal communication which was at appropriate level, concise, and easily understandable.
c. The ability to listen effectively and attentively was displayed.
d. Verbal and non-verbal cues were used and also responded to.
e. The instructor promptly and accurately responded to all requests for returned telephone calls, written responses, reports, or other information.

2. Determine needs and interests of students.

Terminal Objective: Based on student data, the instructor determined the needs and interests of students.

a. Data were reviewed from students' cumulative folder, anecdotal records, attendance and grade records and other sources.
b. All guidelines regarding confidentiality were followed.
c. The instructor assisted students in taking needed standardized tests for determining interests, abilities, I.Q., etc.
d. The instructor discussed students with parents, previous teachers and guidance counselors.
e. Personal interview was held with student.
f. Needs and interests of each student and entire class were determined.

3. Relate to students to facilitate learning.

Terminal Objective: The instructor demonstrated the ability to relate to students to facilitate learning.

a. Communication channels with prospective and continuing students were maintained at all times.
b. A student consultation "open door" policy was established, publicized and maintained.
c. Regard, empathy and interest in students' concerns and aspirations was demonstrated.

Category G: Human Relations (continued)

d. Constructive work group relationships were initiated and developed to establish effective work conditions among students of similar interests and goals.
e. Interest and concern for the students' success and accomplishments and the role of the students' family in this endeavor was displayed.
f. Home visits were conducted.
g. Potential problems of students were identified.
h. Students were assisted in developing good work and study habits.

4. Assist students in developing self-discipline.

Terminal Objective: The instructor demonstrated the ability to assist students in developing self-discipline.

a. Standards of expected student behavior were formulated and published.
b. Acceptable standards of behavior in vocational classrooms and laboratories were formulated, published and upheld consistently.
c. Unacceptable student(s) behavior was identified and appropriate positive action(s) were fairly and promptly administered.
d. Cooperation of students was sought in developing an environment conducive to self-discipline.
e. Student self-direction and responsible decision making was encouraged.
f. Outbursts of student unruliness and displays of aggressive behavior were anticipated and precluded through strong and timely implementation of proper classroom, shop management policies and procedures.
g. Students were involved in developing a written code of behavior.
h. All classroom and laboratory activities were supervised.
i. All discipline problems were handled in a firm, fair and consistent manner.

5. Employ reinforcement techniques in interpersonal relations.

Terminal Objective: The instructor demonstrated the ability to employ reinforcement techniques in interpersonal relations.

a. The instructor responded appropriately to students' verbal and non-verbal cues.
b. The instructor utilized appropriate rewards for desirable performance.
c. Use was made of gestures, pauses and facial expressions to reinforce learning.
d. Negative reinforcement was used appropriately.
e. Extinguishing reinforcement was used appropriately.
f. Various learning activities were utilized that reinforced learning.

6. Demonstrate positive interpersonal relations within the school system.

Terminal Objective: The instructor demonstrated the ability to use positive interpersonal relations within the school system.

a. All required reports, etc. were submitted accurately and on time.
b. The instructor kept the supervisor, principal, director, etc. informed of problems and difficulties.
c. The instructor publicized the vocational program within the school system by available methods.
d. The instructor responded in a professional manner to all requests for information.
e. Appropriate protocol was observed in communicating with superiors.

7. Maintain occupational advisory committee.

Terminal Objective: The instructor demonstrated the ability to maintain an occupational advisory committee.

a. The school administration was informed of plans to establish an advisory committee.
b. Background of previous committee was reviewed.
c. A written document was developed that listed the committee's purpose, name, function and specific responsibilities.
d. A statement of organizational procedures was developed which included policies and procedures for selecting, nominating, replacing members, financial constraints of committee, establishment of rules, etc.
e. Permission was obtained to establish committee by using proper channels.
f. Selected committee members were notified and news released to media.
g. For the initial meeting, the instructor:

(1) Sent agenda, letter of invitation to members.
(2) Served as temporary chairperson.
(3) Provided time for introductions, informal talks, etc.
(4) Assisted committee in developing rules and electing officers.
(5) Gave overview of the vocational program, its goals and problem areas.
(6) Aided committee in establishing major goals to be accomplished.

Category G: Human Relations (continued)

h. For subsequent meetings, the instructor:

(1) Assisted in planning agenda.
(2) Arranged facilities, materials, refreshments.
(3) Maintained liaison between committee and school administration.
(4) Assisted committee members in carrying out their activities and duties.
(5) Communicated committee recommendations to appropriate individual.

8. Sponsor the student vocational organization.

Terminal Objective: The instructor sponsored the student vocational organization for the vocational program.

a. The instructor displayed a philosophy supportive of VICA.
b. A systematic plan was developed to establish a VICA program.
c. The local, district and state VICA representatives were involved.
d. Students were oriented to and recruited for membership in VICA.
e. Co-curricular VICA activities were developed and implemented.

9. Help students secure job or further education.

Terminal Objective: The instructor assisted students leaving the program in securing a job or further education.

a. The instructor assisted students in preparing a well developed resume.
b. The instructor assisted students in completing sample application forms.
c. The instructor assisted students in writing a letter of application.
d. The instructor assisted students in preparing for an interview.
e. The instructor prepared a well written letter of recommendation for the student.
f. Students were aided in formulating plans for further education or employment.
g. Students were aided in locating employment.
h. Educational information was made available to students.

10. Utilize student personnel services or outside agencies to meet student needs.

Terminal Objective: The instructor utilized studont personnel services or outside agencies to meet student needs.

a. Students needing assistance from agencies were identified.
b. Assistance was sought in identifying nature of problem.
c. Students were referred to appropriate individual in student personnel services or outside agency.
d. Follow-up was undertaken to determine if students' needs were met.

Category H: Professional Role

1. Express and display a personal philosophy consistent with the principles of vocational education.

Terminal Objective: The instructor displayed a personal philosophy consistent with the principles of vocational education.

a. The instructor demonstrated a knowledge of acceptable professional and ethical standards of conduct.
b. The instructor maintained ethical standards in dealing with students, colleagues and the public.
c. The instructor displayed an attitude supportive of vocational education, the school and the district.
d. The instructor avoided complaining before students or colleagues.
e. The instructor maintained a generally positive attitude.

2. Utilize opportunities for professional growth, i.e., professional organizations, etc.

Terminal Objective: The instructor utilized opportunities for professional growth.

a. The instructor developed a systematic plan to develop professionally.
b. Opportunities for degrees and advanced certification ranks were taken advantage of.
c. Appropriate professional journals were read regularly.
d. Results of research in teaching effectiveness were adopted if applicable.

Table 2 (continued)

Category H: Professional Role (continued)	
	e. New teaching techniques and media were adopted. f. Professional meetings, seminars, conferences were attended. g. Colleagues were utilized as source of professional growth.
3. Develop a plan to keep up-to-date in the occupational specialty.	
Terminal Objective:	The instructor developed a plan to keep up-to-date in the occupational specialty.
	a. The plan provided for periodic employment in industry for updating. b. The plan included participation in occupational workshops and seminars. c. Journal and trade publications in the occupation were read regularly. d. Occupational licenses and certification were kept up-to-date.

PART III

TRADE AND INDUSTRIAL EDUCATION COMPONENT- Delivery System

CHAPTER 6

INTRODUCTION

There is a need for teacher education programs designed to equip the beginning T&I teacher with those professional skills most urgently needed. This may include specific skills in areas such as evaluation, human relations, instructional planning, etc. Evaluation strategies are also needed that allow for assessment of competency attainment in an actual teaching situation rather than by paper and pencil evaluation on a final examination. The need also exists for additional learning activities to add to the instructor's competence as his/her teaching career progresses. The present course-oriented program in Florida's state universities does not appear to be meeting the professional needs of teachers. This section presents the proposed delivery system for a CBTE program for T&I teachers at Florida State University.

Population Served

In addition to preservice teachers who are working toward certification, the undergraduate vocational education program in Trade and Industrial Education at Florida State University serves three populations: (1) preservice degree-seeking students, (2) preservice teachers seeking certification and who may eventually pursue the B.S. degree, and (3) inservice teachers who are completing certification requirements and may be pursuing the B.S. degree. These groups must meet minimum work experience requirements for certification in the occupation to be taught. The proposed CBTE program is designed to serve the needs of all of these groups. Appendix A depicts the institutions within the eleven county area for which the Florida State University has teacher education responsibility.

CHAPTER 7

METHOD OF ASSIGNING CREDIT TO COMPETENCIES

Traditional courses are based on content and carried out in specific time frames, such as semesters, trimesters, or quarters. With the implementation of a CBTE program, there is a need for a mechanism at the university level which can be used in assigning college credit for the mastery of competencies for persons who are pursuing a degree in a competency-based program. One determinant for assigning credit might be the amount of effort (time and energy) it takes to master the competency or competency cluster. The competencies that require a great deal of effort to master should carry a relatively higher number of credit hours than those competencies requiring less effort.

The project staff administered surveys to selected vocational education personnel at the state and national level. These surveys were designed to determine the mean effort required to master a given competency. Prior to the state and national surveys, the instrument used in the survey (Appendix B) was validated by the regional advisory committee for the university-level Competency-Based Teacher Education program.

National Survey

The national survey conducted at the National Conference for Trade and Industrial Education (1976) in Dallas, Texas during January involved 45 T&I education personnel, representing four groups: (1) teachers, (2) local administrators, (3) state department administrators/supervisors, and (4) teacher-educators. The 45 respondents were representing 26 states. The following table indicates the USOE national regions represented by respondents of the survey.

The instrument used for the national survey contained 75 competency statements (see appendix B). The Preservice competencies were identified and validated during a workshop in Phase I of the project reported earlier. The inservice competencies were identified during the Phase I workshop and were validated during Phase II of the project through the statewide advisory committee. All of these activities were coordinated through the Florida State University.

The participants of the national survey were asked to rate each competency as to effort (time and energy) it would take a beginning T&I teacher to master the competency. Results of the national survey are shown in Appendix D.

Table 3

USOE Regions Represented By
Participants in National Survey

National Regions	T&I Teachers	Local Adm/Supv	State Dept Adm/Supv	Teacher Educ	Region Totals
Region I	1	2	1	2	6
Region II			1	1	2
Region III	1		1	2	4
Region IV	1		1	3	5
Region V		1		5	6
Region VI		2		1	3
Region VII			1	1	2
Region VIII	3	1	1	1	6
Region IX		1			1
Region X		2	1	2	5
Region Undetermined					5
Totals	6	9	7	18	45

State Survey

A Florida survey was then conducted through the statewide advisory committee. The 15 statewide CBTE advisory committee members were asked to rate the 75 competencies for effort on the instrument previously used at the National T&I conference. A second group of Florida T&I personnel also responded to the instrument. Eight regional Trade and Industrial Education supervisors rated the 75 competencies as to effort required to master each competency. The results of the Florida survey are in Table 4. Included in this table is the mean effort rating for each competency by each of the two Florida groups and an indication of those competencies that received a significantly different mean effort rating between the two groups.

Table 4

Mean Effort Rating for Each Competency Statement
1 = Low Effort 6 = High Effort

Item	Competency Statement	Statewide Adv. Com. N=15	State Supv. N=8	Category Mean
Category A	Orientation to Vocational Teaching	3.57	4.49	4.03
*1.	Aware of the purpose of this teacher education program.	3.00	4.50	
2.	Aware of the purpose and principles of Vocational Education.	3.93	4.00	
3.	Aware of the purpose and scope of Trade and Industrial Education.	3.36	3.75	
4.	Aware of teacher responsibilities.	4.14	5.25	
5.	Aware of the steps in planning the instructor's work.	4.61	5.13	
6.	Aware of district and local school policy and organizational structure.	3.69	4.13	
**7.	Aware of the student vocational organization.	2.86	4.75	
*8.	Aware of opportunities for professional growth, e.g. professional organizations, etc.	2.93	4.38	
Category B	Preparation for Instruction	5.21	5.03	5.12
1.	Analyze an occupation.	5.00	4.50	
2.	Identify instructional objectives.	5.15	5.38	
3.	Plan a unit of instruction.	5.43	5.00	
4.	Write a lesson plan.	5.31	5.25	
5.	Select an appropriate teaching method.	5.14	4.88	
6.	Select and obtain instructional materials.	5.29	5.00	
7.	Prepare instructional materials.	4.86	5.13	
8.	Develop course of study.	5.50	5.13	
Category C	Presentation of Instruction	3.72	4.36	4.04
1.	Present a manipulative lesson.	4.21	5.13	
2.	Present a related lesson.	4.29	4.50	
3.	Employ oral questioning techniques.	4.21	4.75	
4.	Present information with illustrated talk.	4.07	4.88	
5.	Conduct group discussions.	4.57	4.38	
6.	Present information with chalkboard.	3.43	4.75	
7.	Present information with overhead projector.	3.57	4.75	
*8.	Present information using models/ real objects.	3.00	4.75	
9.	Present information with films.	3.07	3.88	
10.	Present information with filmstrips/ slides.	3.07	4.25	
11.	Illustrate with bulletin boards and exhibits.	2.79	4.00	
12.	Individualize instruction.	5.07	4.00	
13.	Conduct field trips.	3.86	4.25	
14.	Utilize resource person.	3.21	4.25	
15.	Employ brainstorming techniques	3.43	4.13	
16.	Employ team teaching.	3.71	3.13	

* Significantly different at .05 level
** Significantly different at .01 level

Table 4 (continued)

Item	Competency Statement	Statewide Adv. Com. N=15	State Supv. N=8	Category Mean
Category D	Application of Learning	4.07	4.57	4.32
1.	Direct problem solving.	4.64	5.00	
2.	Direct shop/laboratory experience.	4.64	5.12	
3.	Direct student study.	4.07	4.88	
4.	Direct students in instructing other students.	3.93	4.13	
5.	Employ techniques of simulation.	3.71	4.38	
6.	Employ technique of role playing.	3.43	3.88	
Category E	Evaluation	4.93	4.92	4.92
1.	Assess student skill in shop/ laboratory.	5.23	5.13	
2.	Assess student knowledge in classroom.	4.79	5.00	
3.	Assess important student attitudes.	5.00	4.50	
4.	Determine student grades.	4.86	4.50	
5.	Conduct follow-up study to evaluate program effectiveness.	4.57	5.00	
6.	Evaluate instructional effectiveness.	5.14	5.38	
Category F	Classroom/Laboratory Management	4.15	4.71	4.43
1.	Organize and maintain the vocational classroom.	4.86	4.88	
2.	Organize and maintain the vocational laboratory.	4.86	4.88	
3.	Establish and maintain a filing system.	3.50	4.50	
4.	Establish and maintain a student progress record.	3.93	5.13	
5.	Provide for the safety/first-aid needs of vocational students.	4.50	5.06	
6.	Manage equipment and supplies.	4.21	5.13	
7.	Project instructional resource needs.	4.29	4.38	
8.	Arrange for expanding facilities.	3.07	3.75	
Category G	Human Relations	4.26	4.79	4.53
1.	Communicate with students, other teachers, administrators, laymen.	5.00	5.13	
2.	Determine needs and interests of students.	4.64	4.75	
3.	Relate to students to facilitate learning.	4.58	5.13	
4.	Assist students in developing self-discipline.	4.71	4.75	
5.	Employ reinforcement techniques in interpersonal relations.	4.00	4.38	
6.	Demonstrate positive interpersonal relations within the school system.	4.21	4.38	
7.	Maintain occupational advisory committee.	3.71	4.38	
*8.	Sponsor the student vocational organization.	3.71	5.00	
9.	Help students secure job or further education.	4.14	5.00	
10.	Utilize student personnel services or outside agencies to meet student needs.	3.86	5.00	

* Significantly different at .05 level
** Significantly different at .01 level
Note: Category H not included since competencies in this category were added after Florida survey.

The competencies were later refined through the statewide advisory committee for Competency-Based Industrial Teacher Education with additional feedback by the preservice, inservice, and university-level regional committees. The final validated 65 competencies, reduced from the original 75 used in the instrument, were then used with the national and state mean effort ratings (Table 5) for assigning credit to the competency categories within the T&I component of project ACTIVE.

Table 5

Category Mean Effort Ratings
From the National and State Surveys

Category	National Mean	State Mean	Average Mean
A	4.74	3.94	4.34
B	6.02	5.00	5.51
C	6.96	7.89	7.43
D	2.66	3.17	2.92
E	3.61	3.60	3.61
F	3.77	4.33	4.05
G	4.74	5.53	5.14
H	2.50	1.54	2.02

The traditional B.S. degree program in T&I education at Florida State University (Table 6) includes 20 quarter hours of required professional vocational education courses, 10 additional hours of recommended vocational education electives and 15 hours of associate teaching for a total of 45 quarter hours. Additional requirements make up the 180 quarter hour degree program.

The 45 quarter hour block of professional vocational education courses and associate teaching was maintained for the competency-based program, but with the following changes:

1. Associate teaching was reduced from 15 hours to 10 hours (in compliance with minimum state certification requirements).

2. The 10 hours of associate teaching was divided into two five-hour segments. One segment would be broken up into smaller one and two hour units, each coming after a major competency category is completed. The second five-hour segment would come at the end of the professional sequence.

3. Rather than the required 20 hours and recommended 10 hours of professional vocational education courses, 35 hours of competency-based credit was required in the new curriculum.

Table 6

Present B. S. Degree Program
In T & I Education

I.	Liberal Studies		59 Q.H.
II.	General Professional Preparation		14 Q.H.
III.	Teaching Specialization		45 Q.H.
IV.	Professional Vocational Education		20 Q.H.
	EMB 406 - Princ. & Pract.	5 Q.H.	
	EMB 407 - Occup. Analysis	5 Q.H.	
	EMB 429 - Methods	5 Q.H.	
	EMB 415 - Evaluation	5 Q.H.	
	Total	20 Q.H.	
V.	Associate Teaching		15 Q.H.
VI.	Electives (10 hours in Voc. Ed. recommended)		27 Q.H.
	Total		180 Q.H.

The 35 hours of competency-based professional vocational education credit were divided among the eight competency categories utilizing the following formula, based upon: (1) the number of specific competencies in the category, and (2) the mean effort required to master the competencies in the category. Each category was assigned course numbers and prefixes, indicating the specific competencies to be mastered, and then categorized for incorporation into the Competency-Based Vocational Education B.S. degree program. Table 7 reflects these requirements.

$$\frac{\text{No. of competencies in one category} \times \text{mean effort rating for that category}}{\text{No. of competencies in each category} \times \text{mean effort rating in each category}} \times 35 \text{ qtr. hours} =$$

= credit for one category of competencies

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Table 7

Competency-Based Vocational Education
B.S. Program (T&I)

I.	Liberal Studies			59 Q.H.
II.	General Professional Preparation			14 Q.H.
III.	Teaching Specialization			45 Q.H.
IV.	Professional Vocational Education			40 Q.H.
			Learning Package	Associate Teaching
	EMB 492A	Orient. to Voc. Teaching	4 Q.H.	
	EMB 492B-C	Human Rel. in Voc. Ed.	6 Q.H.	
	EMB 492D	Prep. for Instruction	5 Q.H.	1 Q.H. (EMB 493D)
	EMB 492E-F	Pres. of Instruction	7 Q.H.	2 Q.H. (EMB 493E)
	EMB 492G	Applic. of Learning	3 Q.H.	1 Q.H. (EMB 493G)
	EMB 492H	Evaluation of Learning	4 Q.H.	1 Q.H. (EMB 493H)
	EMB 492I	Management	4 Q.H.	
	EMB 492J	Professional Role	2 Q.H.	
		Total	35 Q.H.	5 Q.H.
V.	Associate Teaching (EMB 493K)			5 Q.H.
VI.	Electives			17 Q.H.
			Total	180 Q.H.

CHAPTER 8

PROPOSED DELIVERY SYSTEM

The proposed model is suggested for all universities in the state of Florida and was based upon Phase II of the Competency-Based Industrial Teacher Education Project.

Delivery System Development Phase

The T&I component of Project ACTIVE will be the first component to be implemented. Pilot implementation will be initiated in the Fall, 1976. Implementation will be gradual, utilizing a dual delivery system until the traditional system is eventually phased out.

A letter of approval for this pilot can be found in Appendix C. Full implementation will be based upon the success of the one year pilot field test. If successful, other components of Project ACTIVE will be implemented as their developmental work is completed.

Competencies

The T&I component of Project ACTIVE was based entirely upon professional competencies validated as important by practitioners in the field of T&I education. These competencies, considered specific in nature, serve as the foundation in the T&I component program within Project ACTIVE. All related specific competencies were then grouped into eight categories.

Assessment

Attainment of the specific competencies will be assessed in an actual teaching or school-related setting. When participants have mastered specific competencies, assessment will be carried out with the participant performing in an actual school setting involving vocational students. This assessment will be done by a qualified resource person using evaluation instruments with specific, objective assessment criteria.

In addition to the assessment of each specific competency by a resource person, participants will be assessed in broad competency categories to determine whether the participant can effectively "fit the pieces together."

This assessment will be carried out by a three-member jury and may include a teacher-educator, master teacher, principal, administrator, supervisor, or other practitioner. The jury will assess the participant's overall mastery of the competencies within each competency category, based upon products developed by the participant (lesson plans, etc.), results of evaluation of specific competencies by resource person, personal interview with the participant, actual observation of the participant's classroom/laboratory teaching, and other methods. This assessment strategy separates instruction from evaluation.

Grading

The participant will receive a letter grade for each specific competency after assessment by the resource person in an actual school situation. This letter grade is based upon the participant's performance in relation to objective assessment criteria which are made public before assessment takes place. After successful assessment of all specific competencies within a category, the jury will assess the participant's ability to effectively demonstrate the category mastery in a school setting. A letter grade will be assigned for each category mastered. Grades on specific competencies are pooled with the grade received for the category.

Participants can progress at their own rate. Learning packages for each specific competency will be designed to permit self-paced instruction. Participants may complete a learning package at any time during a quarter and progress to another package. Should a student complete all learning packages for a quarter prior to the next quarter's registration, the student may register early for the next quarter and continue on. Incompleted learning packages may carry on to the next quarter without penalty.

Transcript

Student progress will be monitored by the use of a conventional transcript as well as a competency-based transcript. The conventional transcript will list the learning packages and grades received. The competency-based transcript will list each category completed with grade, each juror's signature, and the assessment strategies used for that attainment. Beneath each category will be listed the learning packages, date begun, date completed, grade, and the faculty resource person who helped the participant with the learning packages. Attached to the transcript will be a one-page narrative about the participant's performance in relation to other participants, along with the jury and resource person's signature.

Resource Person

The resource person will work closely with approximately 15 to 25 participants, and help them through learning packages, assess attainment of specific competencies in an actual school situation, and arrange the jury assessment of each category. The resource person sits in on the jury assessment only to answer questions, etc. This system promotes a very close relationship between participant and resource person.

Degree and Certification

Participants may or may not be seeking a degree. Those seeking a degree must complete all vocational education learning packages, all university degree requirements and receive a satisfactory grade from the jury assessment on all categories. If the participant is seeking vocational-technical certification only, the core of professional vocational education learning packages are completed, as well as jury assessment of the categories. The State Department of Education, Certification Section, has been actively involved in the conceptualization and planning of Project ACTIVE, and has proposed to certify participants completing Project ACTIVE based upon completion of the program rather than by evaluation of specific courses.

Curricular Materials

Rather than textbook oriented materials, the proposed program will utilize modularized vocational teacher education materials. These materials will provide for an awareness of each competency, opportunities to practice each competency and an evaluation instrument with assessment criteria for final evaluation. These materials were developed at the Center for Vocational Education and have been field tested at Florida State University for more than a year.

Student Teaching

The present student teaching experience would be broken down into several "mini" student teaching experiences, each one following a competency category. After students complete learning activities in a category, they are assessed in an actual teaching situation. This concept places the student teaching experience much closer to the learning activities and gives the student an immediate opportunity to apply what was learned.

Implementation

The proposed CBTE program will be implemented within the present Florida State University Curriculum of Attainments.

This non-traditional program allows individuals to pursue degrees by mastering competencies rather than completing courses.

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PART IV

TRADE AND INDUSTRIAL EDUCATION COMPONENT - Sub-Components

CHAPTER 9

INTRODUCTION

Presently, there are two projects which have been funded in conjunction with the exemplary program and related to the T&I project. Included in this part of the report is a brief review of these projects. Final reports for these two sub-components are available from the Florida State Department of Education, Division of Vocational Education.

COMMUNICATION COMPETENCIES

The purpose of this sub-component was to develop Communication (human relations) modules for use in the competency-based teacher-education program (CBTE) in trade and industrial education. Recently, Dr. Churchill Roberts, University of West Florida, identified a number of communication skills that relate to teaching effectiveness in T&I education. (Roberts & Becker, 1974)

In the area of communication/human relations, a series of studies have been undertaken in the past three years which have had as their objective the identification of communication behaviors which relate to teaching effectiveness. In the spring of 1972, the first project was initiated. Its purpose was to devise a means of obtaining data which would enable the identification of communication problems in the classrooms of vocational education teachers in the state of Florida. After surveying the literature on classroom communication, the method of direct observation was selected as the most reliable means of gathering data. A study was designed and a project was funded to implement it.

During an eight-month period data were collected in the classrooms of 124 Industrial Education teachers. An analysis of the data suggested a number of skills that differentiated good from poor teachers when supervisor or student evaluations were used as teaching effectiveness criteria. To disseminate the findings of this study, an additional project was funded to summarize the main findings in a non-technical report which could be distributed to teachers and teacher educators throughout the state.

The next step was to incorporate the findings of the communication study into a teacher education program. The T&I component, within Project ACTIVE, at Florida State University includes competencies in communication which will utilize the series of communication/human relations modules.

READING PROJECT

The aim of this study was to identify those teacher competencies needed to teach reading in the vocational trade and industrial education classroom. The degree of commonality and uniqueness in the reading skills for each of the three groups of courses selected to represent high, average, and low demand of reading was determined. Specifically, the study attempted to:

1. Determine the reading skills required of trade and industrial students and teachers at the 24 Florida Area Vocational-Technical Centers in courses with three degrees of demand for reading (high, average, and low) as perceived by the teachers;

2. Identify possible differences in the type of reading skills required by the courses with the three degrees of demand for reading; and

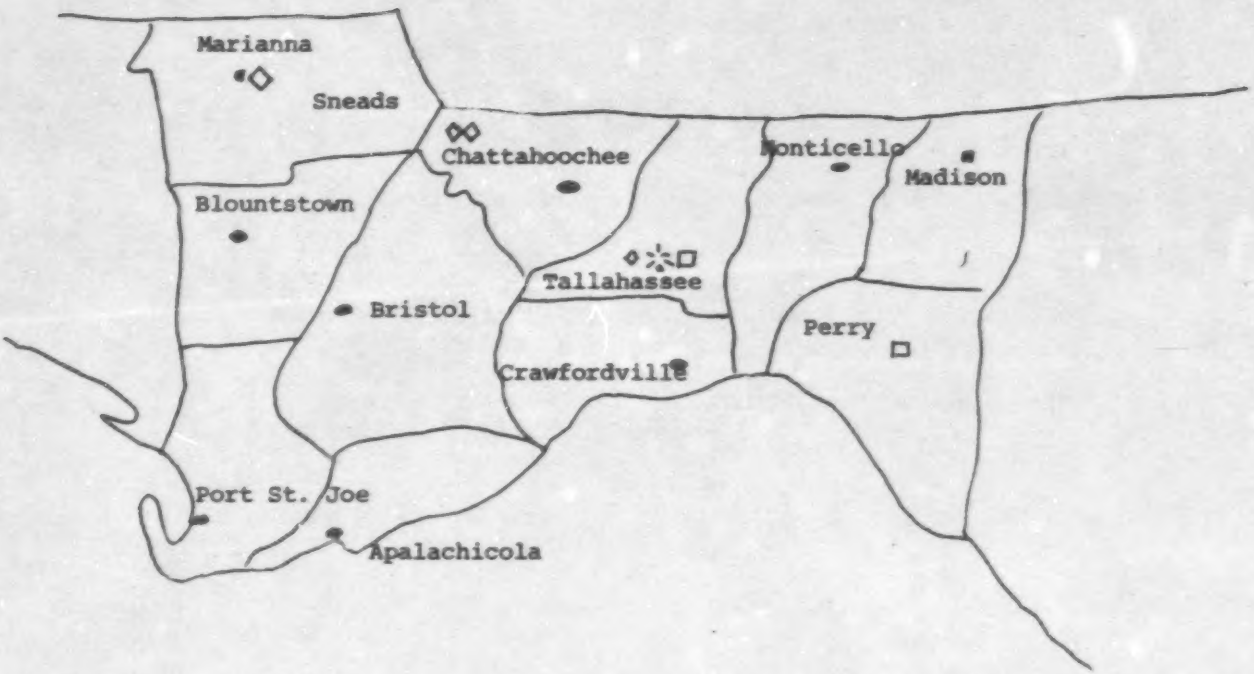
3. Determine the teaching competencies required for trade and industrial education teachers to teach reading in their specific courses as perceived by reading supervisors, reading specialists, and other experts responsible for secondary reading instruction based on the instructional tasks performed by vocational teachers.

The task analysis or role specification approach was used to identify, classify, and validate those teaching competencies related to reading. Vocational teachers were asked to identify the degree of importance and the frequency of teaching tasks they perform that relate directly or indirectly to reading in three courses of varying levels of reading demand. The teaching tasks selected for this proposed study consisted of teacher-oriented tasks and student-oriented tasks. Teacher-oriented tasks are those which the teacher performs; for example, demonstrating a manipulative skill. Student-oriented teaching tasks are those that are related to what the teacher requires of the students in regard to reading; for example, a teacher requires a student to read a job sheet. A comparison was made among the three courses selected to represent high, average, and low demands of reading to determine the common and unique reading skills required in each. Reading teaching competencies needed by vocational teachers for their specific courses were identified by reading experts based on the reports of the vocational teachers.

APPENDIXES

APPENDIX A

Trade and Industrial Education Programs in Florida State University's Georgraphic Service Area



- FSU- Tallahassee
- Comprehensive High School
- Community College
- Correctional Instutute/Hospital
- Area Voc-Tech Center

APPENDIX A (continued)

Listing of Institutions in FSU'S Geographical Area
Offering Trade & Industrial Education Programs

INSTITUTION	ADDRESS/COUNTY
Community Colleges:	
Chipola Junior College	Marianna, Florida 32446 Jackson County
North Florida Junior College	Madison, Florida 32340 Madison County
Area Vocational-Technical Centers:	
Lewis M. Lively Area Vocational-Technical Center	500 N. Appleyard Drive Tallahassee, Florida 32304 Leon County
Taylor County Area Vocational-Technical Center	3233 South U. S. Highway #19 Perry, Florida 32347 Taylor County
Departments of Comprehensive High Schools:	
Blountstown High School	614 Mainstreet Blountstown, Florida 32424 Calhoun County
Apalachicola High School	Apalachicola, Florida 32320 Franklin County
James A. Shanks High School	West King Street Quincy, Florida 32351 Gadsden County
Port St. Joe High School	Port St. Joe, Florida 32456 Gulf County
Jefferson County High School	P. O. Box 540 Monticello, Florida 32344 Jefferson County
Liberty County High School	Bristol, Florida 32321 Liberty County
Wakulla County High School	Route 2, Box 520 Crawfordville, Florida 32327 Wakulla County

APPENDIX A (continued)

INSTITUTION	ADDRESS/COUNTY
Mental Hospitals:	
Florida State Hospital	Chattahoochee, Florida 32324 Gadsden County
Correctional Institutions:	
Arthur G. Dozier School for Boys	P. O. Box 490 Marianna, Florida 32446 Jackson County
Apalachee Correctional Institution	P. O. Box 699 Sneads, Florida 32460 Jackson County
River Junction Correctional Institution	P. O. Box 37 Chattahoochee, Florida 32324 Gadsden County
Federal Correctional Institution	Tallahassee, Florida Leon County

APPENDIX B

FLORIDA STATE UNIVERSITY
TALLAHASSEE, FLORIDA
VOCATIONAL EDUCATION PROGRAM

Proposed Competency-Based Teacher Education Program for Trade and Industrial Education Teachers

INSTRUCTIONS

Attached is a list of the specific competencies for a proposed CBTE program for T & I teachers. Please assist us by doing the following:

1. Please complete the professional data below, and:
2. Please review each category of competencies carefully and rate each competency based on the amount of effort (time and energy) required by a typical beginning T & I teacher to attain each. Please feel free to add, delete or alter any competency statements.

Professional Data

1. Are you directly involved in some phase of Trade and Industrial Education?

   _____Yes; _____No: What other area?_____

2. Your present position:

   _____T & I teacher; _____Local Adm/Supv;

   _____State Dept Adm/Supv; _____Teacher Educ; Other_____

3. Number of years in present position:

   ___1-2; ___3-5; ___6-10; ___11-15; ___16-25; ___ov 25

4. Number of years as T & I teacher (if any):

   ___none; ___1-2; ___3-5; ___6-10; ___11-15; ___16-25;

   ___over 25

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A. Orientation to Vocational Teaching - designed to give the instructor a brief overview of vocational teaching.

			Low Effort					High Effort
_____	1.	Aware of the need for teacher education	1	2	3	4	5	6
_____	2.	Aware of the purpose and principles of Vocational Education.	1	2	3	4	5	6
_____	3.	Aware of the purpose and scope of Trade and Industrial Education	1	2	3	4	5	6
_____	4.	Aware of district and local school policy and organizational structure.	1	2	3	4	5	6
_____	5.	Aware of teacher responsibilities.	1	2	3	4	5	6
_____	6.	Aware of the steps in planning the instructor's work.	1	2	3	4	5	6
_____	7.	Aware of the four-step plan.	1	2	3	4	5	6
_____	8.	Aware of teaching and working relationship.	1	2	3	4	5	6
_____	9.	Aware of student vocational organization.	1	2	3	4	5	6
_____	10.	Aware of the opportunities for professional growth.	1	2	3	4	5	6
_____	11.	_____	1	2	3	4	5	6

B. Preparation for Instruction - principles and techniques of planning and organizing instructional materials and preparing and motivating students to learn.

			Low Effort					High Effort
_____	1.	Establish occupational advisory committee.	1	2	3	4	5	6
_____	2.	Maintain occupational advisory committee.	1	2	3	4	5	6
_____	3.	Analyze an occupation.	1	2	3	4	5	6
_____	4.	Develop course outline.	1	2	3	4	5	6
_____	5.	Identify performance objectives.	1	2	3	4	5	6
_____	6.	Select an appropriate teaching method.	1	2	3	4	5	6
_____	7.	Plan a unit of instruction	1	2	3	4	5	6
_____	8.	Write a lesson plan.	1	2	3	4	5	6
_____	9.	Select and obtain instructional materials.	1	2	3	4	5	6
_____	10.	Prepare instructional materials.	1	2	3	4	5	6
_____	11.	Plan individualized instruction.	1	2	3	4	5	6
_____	12.	Motivate students.	1	2	3	4	5	6
_____	13.	_____	1	2	3	4	5	6

C. Presentation of Instruction - principles and techniques for helping students master instructional objectives.

			Low Effort					High Effort
_____	1.	Use illustrated talk or lecture.	1	2	3	4	5	6
_____	2.	Present a related lesson.	1	2	3	4	5	6
_____	3.	Present a manipulative lesson.	1	2	3	4	5	6
_____	4.	Utilize resource person(s).	1	2	3	4	5	6
_____	5.	Employ team teaching.	1	2	3	4	5	6
_____	6.	Conduct group discussions.	1	2	3	4	5	6
_____	7.	Employ oral questioning techniques.	1	2	3	4	5	6
_____	8.	Employ brainstorming techniques.	1	2	3	4	5	6
_____	9.	Conduct field trips.	1	2	3	4	5	6
_____	10.	Individualize instruction.	1	2	3	4	5	6
_____	11.	Use chalkboard.	1	2	3	4	5	6
_____	12.	Use overhead projector.	1	2	3	4	5	6
_____	13.	Use films.	1	2	3	4	5	6
_____	14.	Use filmstrips/slides.	1	2	3	4	5	6
_____	15.	Use models or real objects.	1	2	3	4	5	6
_____	16.	Use bulletin boards & exhibits.	1	2	3	4	5	6
_____	17.	_____	1	2	3	4	5	6

D. Application of Learning - principles and techniques for helping students apply what they have learned.

		Low Effort					High Effort
_____	1. Direct student study.	1	2	3	4	5	6
_____	2. Direct shop/laboratory experience.	1	2	3	4	5	6
_____	3. Direct problem solving activites.	1	2	3	4	5	6
_____	4. Direct role playing.	1	2	3	4	5	6
_____	5. Direct simulation.	1	2	3	4	5	6
_____	6. Direct students in instructing other students.	1	2	3	4	5	6
_____	7. _____	1	2	3	4	5	6

E. Evaluation - principles and techniques for evaluating students' master of instructional objectives.

			Low Effort					High Effort
_____	1.	Establish criteria for student performance.	1	2	3	4	5	6
_____	2.	Assess student knowledge in the classroom.	1	2	3	4	5	6
_____	3.	Assess student skill in shop/ laboratory.	1	2	3	4	5	6
_____	4.	Assess important student attitudes.	1	2	3	4	5	6
_____	5.	Determine student grades.	1	2	3	4	5	6
_____	6.	Evaluate instructional effectiveness.	1	2	3	4	5	6
_____	7.	Conduct follow-up study to evaluate program effectiveness.	1	2	3	4	5	6
_____	8.	_____	1	2	3	4	5	6

F. Classroom/Laboratory Management - principles and techniques of managing time, materials, equipment, supplies, etc. for safe and effective mastery of instructional objectives.

		Low Effort					High Effort
_____	1. Utilize a filing system.	1	2	3	4	5	6
_____	2. Organize and maintain classroom and lab.	1	2	3	4	5	6
_____	3. Manage equipment and supplies.	1	2	3	4	5	6
_____	4. Provide for student safety needs.	1	2	3	4	5	6
_____	5. Provide for student first aid needs.	1	2	3	4	5	6
_____	6. Use student progress record.	1	2	3	4	5	6
_____	7. Arrange for expanding facilities.	1	2	3	4	5	6
_____	8. Project instructional resource needs.	1	2	3	4	5	6
_____	9. _____	1	2	3	4	5	6

G. Human Relations - principles and techniques for effectively communicating with students, parents, colleagues, administration, community and others with whom the instructor must deal.

			Low Effort					High Effort
_____	1.	Communicate effectively with others.	1	2	3	4	5	6
_____	2.	Conduct conferences to meet student needs.	1	2	3	4	5	6
_____	3.	Help students secure job or further education.	1	2	3	4	5	6
_____	4.	Relate to students to facilitate learning.	1	2	3	4	5	6
_____	5.	Sponsor the student vocational organization.	1	2	3	4	5	6
_____	6.	Utilize outside sources to meet student needs.	1	2	3	4	5	6
_____	7.	Employ reinformcement technique in interpersonal relations.	1	2	3	4	5	6
_____	8.	Use techniques for good interpersonal relations.	1	2	3	4	5	6
_____	9.	Help students develop self-discipline.	1	2	3	4	5	6
_____	10.	Determine needs and interests of students.	1	2	3	4	5	6
_____	11.	_____	1	2	3	4	5	6

H. Foundations of Vocational Education - designed to give the instructor an indepth knowledge of the field of vocational education.

			Low Effort					High Effort
_____	1.	Describe the origin of vocational education.	1	2	3	4	5	6
_____	2.	Identify factors which led to federal support for vocational education.	1	2	3	4	5	6
_____	3.	Identify and describe the principles of vocational education	1	2	3	4	5	6
_____	4.	Describe the major federal legislative acts from 1917 to the present which support vocational education.	1	2	3	4	5	6
_____	5.	Describe current state legislation affecting vocational education.	1	2	3	4	5	6
_____	6.	Express a sound philosophy of vocational education.	1	2	3	4	5	6
_____	7.	_____	1	2	3	4	5	6

Please turn to Page 10

Please go back through each category at this time and identify (by placing X in the blank to the left) the competencies in each area which you feel are needed immediately by a beginning T & I teacher. Some categories may have few competencies which are needed immediately while others may have several.

Thank you for your valuable assistance,
Please return this instrument to the
presenter when you have finished....

FLORIDA STATE UNIVERSITY
VOCATIONAL EDUCATION PROGRAM

Competency-Based Teacher Education Program For
Industrial Education Teachers

_____I would like to receive a copy of the results of this survey, plus the additional information about CBTE at Florida State University listed below:

_____

_____

_____

Name: _____

Title: _____

Address: _____

_____

_____

APPENDIX C

Office of the Dean
of the Faculties

The Florida State University
Tallahassee, Florida 32306

August 3, 1976

MEMORANDUM

To: Dr. Robert E. Andreyka, Program Leader
Vocational Education

From: Daisy P. Flory

Subject: Proposed competency-based program in Trade and Industrial Education

The University Curriculum Committee voted to approve the 15 courses in the subject program for one year only. The approved period will be Fall quarter 1976 through Summer quarter, 1977.

Before the end of this period it will be necessary to decide whether to keep the old or the new program, and to initiate any approval documentation needed to implement that decision. This action should be taken no later than the beginning of the summer quarter.

If the new competency-based program is to be continued you will need to submit curricular request forms to discontinue the courses in the old program. Request forms for the new courses can be re-approved rather than initiate new forms. If the new program does not work out and you elect to let the temporary approval expire, please inform me of this decision so that our records will be complete.

DPF/cm

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APPENDIX D

Mean Effort Ratings of Competencies By Four National Trade and Industrial Education Groups - (Based Upon Original 75 Competencies)

Table I

Mean Effort Rating of Competencies In the "Orientation to Vocational Teaching" Category

Item	Competency Statement	Rank and Mean Within Each Group									
		T & I Teacher N = 7		Local Adm/Supv N = 12		State Dept Adm/Supv N = 8		Teacher Educator N = 18		Total Group N = 45	
		Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean
1	Aware of the need for teacher preparation.	5.5	4.71	9	3.75	7	5.00	5.5	4.56	7	4.44
2	Aware of the purpose and principles of Vocational Education.	4	5.00	3	5.00	1	5.75	5.5	4.56	4	4.96
3	Aware of the purpose and scope of Trade and Industrial Education.	1	5.43	5.5	4.83	3.5	5.38	7	4.44	6	4.87
4	Aware of the district and local school policy and organizational structure.	9.5	4.14	7.5	4.25	10	4.63	8	4.39	8	4.36
5	Aware of teacher responsibilities.	3	5.29	1	5.50	2	5.50	1	5.67	1	5.53
6	Aware of the steps in planning the instructor's work.	1	5.43	2	5.25	6	5.25	1	5.67	2	5.44
7	Aware of the four-step plan.	7	4.57	5.5	4.83	3.5	5.38	3	5.33	3	5.09
8	Aware of teaching and working relationship.	5.5	4.71	4	4.92	5	5.38	4	4.83	5	4.93
9	Aware of student vocational organization.	9.5	4.14	10	3.52	8.5	4.75	10	3.78	10	3.96
10	Aware of the opportunities for professional growth.	8	4.29	7.5	4.25	8.5	4.75	9	4.17	9	4.31

Category mean from total group = 4.79

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Table II

Mean Effort Rating of Competencies In the "Preparation for Instruction" Category

Item	Competency Statement	Rank and Mean Within Each Group									
		T & I Teacher N = 7		Local Adm/Supv N = 12		State Dept Adm/Supv N = 8		Teacher Educator N = 18		Total Group N = 45	
		Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean
1	Establish occupational advisory committee.	6	5.00	6.5	5.08	9.5	5.13	12	3.72	12	4.53
2	Maintain occupational advisory committee.	6	5.00	3.5	5.42	6.5	5.25	11	3.83	11	4.69
3	Analyze an occupation.	9	4.86	10	4.92	11.5	4.50	6.5	5.17	9	4.93
4	Develop course outline.	1	5.43	2	5.50	11.5	4.50	5	5.39	4	5.27
5	Identify performance objectives.	1	5.43	3.5	5.42	6.5	5.25	2.5	5.56	2	5.44
6	Select an appropriate teaching method.	11	4.71	10	4.92	6.5	5.25	6.5	5.17	6	5.04
7	Plan a unit of instruction.	4	5.14	6.5	5.00	3.5	5.38	4	5.50	3	5.31
8	Write a lesson plan.	12	4.43	5	5.17	3.5	5.38	2.5	5.56	5	5.24
9	Select and obtain instructional materials.	9	4.86	10	4.92	9.5	5.13	8	5.06	8	5.00
10	Prepare instructional materials.	3	5.29	8	5.00	6.5	5.25	9	4.83	7	5.02
11	Plan individualized instruction.	6	5.00	12	4.83	1	5.63	10	4.56	10	4.89
12	Motivate students.	9	4.86	1	5.67	2	5.50	1	5.72	1	5.53

Category mean from total group = 5.07

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Table III

Mean Effort Rating of Competencies In the "Presentation of Instruction" Category

Item	Competency Statement	Rank and Mean Within in Each Group									
		T & I Teacher N = 7		Local Adm/Supv N = 12		State Dept Adm/Supv N = 8		Teacher Educator N = 18		Total Group N = 45	
		Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean
1	Use illustrated talk or lecture	4	4.71	8	4.53	11	4.25	5.5	4.78	6	4.62
2	Present a related lesson.	4	4.71	5	4.67	6.5	4.50	3	5.17	4	4.84
3	Present a manipulative lesson.	1	5.43	2	5.08	3.5	4.75	1	5.61	1	5.29
4	Utilize resource person(s).	9	4.00	11	4.17	3.5	4.75	13	3.83	12	4.11
5	Employ team teaching.	16	3.14	16	3.42	15	3.88	16	3.50	16	3.49
6	Conduct group discussions.	4	4.71	5	4.67	11	4.25	11	4.39	8	4.49
7	Employ oral questioning techniques.	7	4.43	1	5.17	11	4.25	2	5.56	2	5.04
8	Employ brainstorming techniques.	9	4.00	13	4.00	16	3.75	14	3.78	14	3.87
9	Conduct field trips.	13.4	3.71	15	3.50	13	4.13	12	3.89	15	3.80
10	Individualize instruction.	6	4.57	5	4.67	1	5.13	7	4.61	5	4.71
11	Use chalkboard.	9	4.00	9	4.33	14	4.00	8.5	4.50	9	4.29
12	Use overhead projector.	11.5	3.86	7	4.58	6.5	4.50	4	4.94	7	4.60
13	Use films.	15	3.57	10	4.25	8.5	4.38	8.5	4.50	10	4.27
14	Use filmstrips/slides.	11.5	3.86	12	4.08	8.5	4.38	10	4.44	11	4.24
15	Use models or real objects.	2	5.14	3	4.83	2	4.88	5.5	4.78	3	4.87
16	Use bulletin boards and exhibits.	13.5	3.71	14	3.91	5	4.63	15	3.69	13	3.93

Category mean from total group = 4.40

Table IV

Mean Effort Rating of Competencies In the "Application of Learning" Categories

Item	Competency Statement	Rank and Mean Within Each Group								Total Group N = 45	
		T & I Teacher N = 7		Local Adm/Supv N = 12		State Dept Adm/Supv N = 8		Teacher Educator N = 18			
		Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean
1	Direct student study.	5	3.86	3	4.58	4	4.25	3	4.72	3	4.47
2	Direct shop/laboratory experience.	1	5.86	1	5.50	1	5.38	1	5.67	1	5.60
3	Direct problem solving activities.	2	5.43	2	5.33	2	4.88	2	5.06	2	5.16
4	Direct role playing.	6	3.43	6	3.67	6	3.75	6	3.56	6	3.60
5	Direct simulation.	3.5	4.29	5	3.92	5	4.00	5	3.72	5	3.93
6	Direct students in instructing other students.	3.5	4.29	4	4.08	3	4.50	4	4.00	4	4.16

Category mean from total group = 4.48

Table V

Mean Effort Rating of Competencies In the "Evaluation" Category

Item	Competency Statement	Rank and Mean Within in Each Group								Total Group N = 45	
		T & I Teacher N = 7		Local Adm/Supv N = 12		State Dept Adm/Supv N = 8		Teacher Educator N = 18			
		Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean
1	Establish criteria for student performance.	3	5.43	5	5.33	2.5	5.50	2	5.56	2.5	5.47
2	Assess student knowledge in the classroom	4.5	5.00	6	5.17	6	4.63	5	5.22	6	5.07
3	Assess student skill in shop/laboratory.	1	5.86	4	5.42	4	5.38	1	5.61	1	5.56
4	Assess important student attitudes.	4.5	5.00	3	5.50	5	5.25	3	5.39	4	5.33
5	Determine student grades.	7	4.14	7	4.75	7	4.13	6	4.83	7	4.58
6	Evaluate instructional effectiveness.	2	5.71	1	5.58	2.5	5.50	4	5.28	2.5	5.47
7	Conduct follow-up study to evaluate program effectiveness.	6	4.86	1	5.58	1	5.63	7	4.61	5	5.09

APPENDIX D (continued)

Table VI

Mean Effort Rating of Competencies In the "Classroom/Laboratory Management" Category

Item	Competency Statement	Rank and Mean Within Each Group								Total Group N = 45	
		T & I Teacher N = 7		Local Adm/Supv N = 12		State Dept Adm/Supv N = 8		Teacher Educator N = 18			
		Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean
1	Utilize filing system.	6	4.57	7	4.08	7	4.00	6	4.22	7	4.20
2	Organize and maintain classroom and lab.	2.5	5.29	2	5.25	4	4.88	2	5.56	2	5.31
3	Manage equipment and supplies.	4.5	5.00	3	5.08	2.5	5.00	3	5.39	3	5.18
4	Provide for student safety needs.	1	5.86	1	5.42	1	5.50	1	5.78	1	5.64
5	Provide for student first aid needs.	4.5	5.00	4.5	4.92	5	4.63	5	4.89	5	4.87
6	Use student progress record.	2.5	5.29	4.5	4.92	2.5	5.00	4	5.00	4	5.02
7	Arrange for expanding facilities.	8	4.29	8	3.67	8	3.63	8	3.39	8	3.64
8	Project instructional resource needs.	7	4.43	6	4.25	6	4.38	7	4.17	6	4.27

Category mean from total group = 4.77

Table VII

Mean Effort Rating of Competencies In the "Human Relations" Category

Item	Competency Statement	Rank and Mean Within Each Group								Total Group N = 45	
		T & I Teacher N = 7		Local Adm/Supv N = 12		State Dept Adm/Supv N = 8		Teacher Educator N = 18			
		Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean
1	Communicate effectively with others.	1	5.86	1	5.87	1	5.25	1	5.61	1	5.60
2	Conduct conferences to meet student needs.	9	4.29	9	4.38	10	4.25	9	4.17	10	4.18
3	Help students secure job or further education.	5	5.00	5	4.83	2.5	4.88	8	4.22	7	4.62
4	Relate to students to facilitate learning.	2.5	5.43	3	5.17	5.5	4.75	2	5.33	2	5.20
5	Sponsor the student vocational organization.	10	4.00	10	4.00	9	4.38	7	4.33	9	4.20
6	Utilize outside sources to meet student needs.	8	4.57	8	4.17	7	4.57	10	4.11	8	4.27
7	Employ reinforcement techniques in interpersonal relations.	6	4.86	7	4.50	5.5	4.75	6	5.0	6	4.80
8	Use techniques for good interpersonal relations.	7	4.71	6	4.67	8	4.50	3	5.17	5	4.84
9	Help students develop self-discipline	4	5.14	2	5.33	2.5	4.88	4.5	5.06	3	5.11
10	Determine needs and interests of students.	2.5	5.43	4	5.08	4	4.86	4.5	5.06	4	5.09

Category mean from total group = 4.79

Table VIII

Mean Effort Rating of Competencies In the "Foundations of Vocational Education" Category

Item	Competency Statement	Rank and Mean Within Each Group								Total Group N = 45	
		T & I Teacher N = 7		Local Adm/Supv N = 12		State Dept Adm/Supv N = 8		Teacher Educator N = 18			
		Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean
1	Describe the origin of vocational education	5	3.71	6	3.25	5	3.75	6	3.44	6	3.49
2	Identify factors which led to federal support for vocational education.	6	3.29	4	3.42	4	3.88	5	3.56	5	3.53
3	Identify and describe the principles of vocational education.	3	4.43	2	4.58	3	4.50	2	5.00	2	4.71
4	Describe the major federal legislative acts from 1917 to the present which support vocational education.	4	4.00	5	3.33	6	3.38	4	3.61	4	3.56
5	Describe current state legislation affecting vocational education.	2	5.00	3	4.00	2	4.88	3	4.33	3	4.44
6	Express a sound philosophy of vocational education.	1	5.86	1	5.67	1	5.13	1	5.44	1	5.51

Category mean from total group = 4.21

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